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WARTIME PROBLEMS IN INDUSTRIAL HEALTH

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CERTAINLY no one factor about modern warfare has so impressed everyone of us as its dependence on industrial production. There is great and justifiable concern about our resources in materials, machines and manpower. As a matter of fact, our greatest shortage of all is *time*. It is now regarded as axiomatic that no modern military power can afford to lose the productive energy of skilled and capable craftsmen from exposures unfavorable to health which in the main are preventable. In the course of current events, it is becoming plainer daily that the unprecedented mobilization of everything we possess must include intensification of industrial health effort.

The wartime problems of medicine in industry are not so much the acquisition of new information as wider and more direct application of what we already know. Industrial hygienists believe that the medical and engineering profession have accumulated sufficient data and have in their possession equipment and knowledge of technical procedure to control all but the very newest occupational exposures or the very latest modifications of old ones. To be sure, research is a highly essential factor in the prosecution of wartime industrial health activity to such an extent that a considerable share of the total activities of such agencies as the Division of Industrial Hygiene of the National Institute of Health and many committees set up in the National Research Council is directly applicable to the physical welfare of workers. The Subcommittee on Industrial Health and Medicine of the Federal Security Agency has listed certain problems as of particular significance, as, for example, the intensified occupational dermatoses problems associated with the increased use of cutting oils, compounds and chemicals; the appearance of new abrasives in grinding operations; the reversion to sand in many blasting operations; the enormous expansion in the use of acids in pickling operations and solvents of almost uncounted numbers and uses; the employment of x-rays in line operations; modifications in paint spraying methods and many other types of exposures which can be exceedingly troublesome if proper control measures are not utilized. All of us are familiar with the risks of munitions manufacture and production of war gases. Certainly, one of the most perplexing problems facing industry at the moment is the shifting nature of the work force resulting from the dislocation of young males to the military establishments requiring replacement by women, older men, substandard workers of various types including handicapped individuals or others not eligible for military service, practically all of whom require selective placement in occupations suitable to their physical and temperamental makeups.

But in the main, the principal industrial problems which confront the medical profession over and above those which have to do with improved standards of medical and surgical care, are those involved in the wider application of preventive medicine and surgery in industry and the much more extensive and improved industrial health supervision by physicians in plants of all kinds and sizes. The directions in which we are likely

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to find a solution to these complex situations may possibly be best illustrated as follows:

About a year and a half ago the director of the bureau of industrial hygiene in one of our state health departments asked the personnel manager of a good-sized machine tool company to maintain sickness records as a means of analyzing the causes of employe absenteeism. The plant was most coöperative and after careful study the conclusion was reached that considerable sums in lost wages and in shop production could be saved if more adequate industrial health supervision could be provided for the plant personnel. In the course of events a full-time industrial physician and three full-time industrial nurses were employed to supply this type of service to approximately 2,500 workers.

This procedure aroused interest elsewhere in the same industrial community and other smaller plants were impressed with the contribution which medical service could make in lowering lost time absences arising out of causes related to health. Since these plants felt unable individually to support a full-time physician, the local medical profession was consulted. It was suggested that individual practicing physicians might meet these new medical requirements if a basis agreeable to the employer and to the doctors could be arranged. After full discussion a rotating scheme for personal visitation by physicians to the plants was hit upon, such visits to occur daily, to last at least an hour, and to occur at a definite time of day, usually in the morning. It is interesting to report that frequently these physicians have become interested enough so that they spend more time than is actually required. The manner of rotation and all other medical policies, including compensation, are made by the local profession and recommendations sent directly to the personnel managers. All physicians in the community can participate if they care to, and nearly all of them do.

This experience compresses into one compact case history a number of very important considerations—

1. It exemplifies the growing recognition by industrialists of the value of industrial health service. We have something they can use provided a method is devised which the employer can comfortably support.

2. It supplies an answer, at least in part, to the vexing question of how industrial health can be brought to the small plant.

3. It dramatizes the immensely improved relationships which are rapidly coming to exist everywhere between the three major classification of physicians on whom industrial medical activity largely rests:

(a) The industrial hygienist, commonly associated with bureaus of industrial hygiene in state health departments, whose functions are mainly investigative or consultative directly to industry and to the medical profession as well as certain duties in relation to enforcement of public health and sanitary codes relating to conditions of work. Prevention of industrial disability, whatever form it takes, occupies a prominent place in his thinking.

(b) The full-time physician serving in one or several plants who exemplifies specialty practice in this field. He is concerned very materially with prevention in all of its aspects but in addition he must treat compensable disability and occupy himself with the many details of medical department administration.

(c) The private practitioner in general or special practice who serves on call or part time. Best current estimates indicate that 80 to 85 per cent of medical service to industry is supplied in this fashion. As such it has been mainly remedial in character to such an extent that medium-sized and smaller plants have been left without the considerable advantages of preventive industrial medicine and surgery.

Objectives and Program

The ability of the private practitioner to extend his interests in the industrial field and to face new problems and altered relationships has engaged the complete attention of the Council on Industrial Health for many months, both singly and in combination with the Subcommittee on Industrial Health and Medicine of the Health and Medical Committee, Federal Security Agency. From the very outset the Council became convinced that its educational and other services could only be made effective through wholehearted coöperation with each state medical society. We have been in close touch with developments in the Minnesota State Medical Association through its own Committee on Industrial Hygiene and Occupational Diseases under the chairmanship of Dr. J. L. McLeod of Grand Rapids. I am thoroughly convinced that as the full implications unfold, no committee in your state association structure will be called upon to provide a higher type of leadership or will contribute more to existing medical standards or to the advancement of sound professional relationships. It now becomes desirable and even imperative to extend this same type of coöperative

organization into counties to enable our membership to respond to the medical needs of industry occurring in their own individual communities.

What kind of program do we have in mind? In the first place, we must agree upon objectives. The purpose of medicine in industry is to promote the health and physical well being of industrial employes. These objectives should be accomplished by:

1. Prevention of disease or injury in industry by establishing proper medical supervision over industrial materials, processes, environments and workers.
2. Health conservation of workers through physical supervision and education.
3. Medical and surgical care to restore health and earning capacity as promptly as possible following industrial accident or disease.

Certainly no new principle is enunciated in this list of objectives but it does provide a foundation on which the superstructure of specific functions in industrial medicine can rest and can be so regarded with confidence by all elements in the medical profession.

In the second place, we must define a little more in detail the medical needs of industry in terms of personnel and specific functions which will bring to plants both large and small good medical supervision, satisfactory both to those who receive as well as those who supply these services. All existing plans contain the following essential components:

For every plant:

1. A physician.
2. Nursing service.
3. Industrial hygiene service.
4. Proper correlation of plant health activities with:
   (a) The practicing profession.
   (b) The industrial commission.
   (c) Units of local, county and state health departments.
5. A health program to include:
   (a) Health conservation by physical supervision and education.
   (b) Plant inspections to establish control over harmful exposures.
   (c) First aid and emergency care.
   (d) Proper reporting of all lost time disability.
6. Adequate compensation of industrial health personnel.

As this ideal goal is reached (and enormous impetus is accumulating under the pressure of war industry and in the expressions of influential people in the government, in industry, and in labor) we can begin to feel that the quality of industrial health supervision is approaching reasonable uniformity—the quality only varying according to size of the plant. To hasten this end, the Council on Industrial Health has issued a series of pamphlets descriptive of Medical Service in Industry which includes such titles as—

1. *Outline of Procedure for Physicians in Industry.* This is designed to acquaint the practicing physician with duties and relationships in industry—a most helpful and useful statement.
2. *The Industrial Medical Department.* A brief description of how to go about setting up a plant dispensary.
3. *Plant Hygiene Studies.* This emphasizes that no physician will make a real contribution unless he gets out in the plant and makes instructive suggestions about the prevention of harmful exposures, using necessary industrial hygiene consultation and study whenever necessary.

All these publications and others on various aspects of industrial health are available on request from the Council office in Chicago or through your own state committee organization.

Procurement

Now that we have defined specific needs and objectives in industrial health, we come to the most serious problem of all—the procurement of professional and technical personnel sufficient in number and in competence to supply these services about which we have been talking. There are three main aspects:

1. Shall existing industrial-medical services be maintained as essential to the war effort?
2. From what sources may we expect to draw additions and replacements to our present industrial medical organizations?
3. What provision is necessary to arrange for the training of new recruits?

Plans are on foot to clarify the status of the industrial physician. He is always ranked high in the essential civilian medical services along with members of hospital staffs and faculties of medical schools. Instructions are being prepared by the Procurement and Assignment Service with the help of its Advisory Committee on Industrial Health and Medicine, so that the state procurement and assignment committees will be able to refer to explicit instructions about maintenance of industrial physicians at existing assignments. Evidently also these same state procurement and

assignment committees will function more and more as placement centers for new untrained medical personnel needed in war industry.

The most difficult problem to solve has been the matter of providing the proper training. A few professional schools have developed advanced training courses and there has been some effort to provide continuation study under existing postgraduate programs in state medical societies. The greatest success has been encountered where there has been concomitant training of physicians and industrialists together in the benefits to be derived from industrial health activity. The "Outline of Procedure for Physicians in Industry" will act as an immediately available guide to all ordinary duties and relationships. For more extended training both before and after graduation, the Council on Industrial Health and the Committee on Education of the American Association of Industrial Physicians and Surgeons have prepared a report entitled, "The Teaching of Industrial Health," which we will be glad to supply either directly or through application to your own state society committee.

Conclusion

In the last analysis, a considerable share of the problems in industrial health boil down to these three:

1. Is this environment a safe and healthful place in which to work?

2. Is this worker properly equipped physically and temperamentally for the work he is doing or for which he is applying, and if not how can he be fitted to perform it?

3. Is this physician properly equipped to recognize and control forms of disability most likely to occur in plants or in occupational groups under his supervision?

In each of these fields attempts are being made to apply the techniques of standardization and certification. Plants are already being inspected for hazards to health and safety. Industrial medical departments are being approved as fulfilling certain minimum standards. In keeping with the times, it is proposed that physicians limiting practice to industrial medical affairs demonstrate their qualifications as specialists before a certifying board.

These prospects, whatever else may be said about them, indicate that industrial health is a province in medicine of great vitality and with most interesting potentialities. Many of its important aspects which only physicians are equipped to perform are virtually unexplored. Here, perhaps, is one of the few remaining opportunities for the extension of needed medical service on the basis of personal initiative by individual physicians. Again, developments which have already occurred may be the spearhead leading to nationalization of certain forms of medical service. In any event, the highest type of medical leadership and diplomacy is needed to see that the essential interests of the worker, the employer and the physician are properly understood and intelligently safeguarded.

MINNESOTA'S INDUSTRIAL HEALTH PROGRAM

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THIS is the first meeting of the Association since the establishment of a Division of Industrial Health in the State Health Department. We hear a great deal at this time of the importance of protecting the health of the industrial worker, "the man behind the man behind the gun," and for this reason this is probably an opportune time to introduce this new activity. We should not be led to feel, however, that the importance of the activity hinges upon the war effort, or that this State, because of the war, is enjoying a position of industrial importance which will soon collapse following the cessation of hostilities. On the contrary, figures from the 1930 Census show that upon the basis of the number of persons employed in the mineral, manufacturing, and mechanical industries, Minnesota with 210,299 employes ranks twenty-

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second among the States. This position is not as low relatively as it may appear, since Minnesota has only 32,000 fewer employed in the above mentioned groups than the state occupying fifteenth place. In other words, Minnesota ranks practically among the upper third of states according to the number of persons employed in mineral, manufacturing, and mechanical industries. Connecticut, a state commonly regarded as of much greater industrial importance, employs only 50 per cent more persons in these industries. The war then has helped focus upon this problem the attention which it deserves.

I do not believe there are many of us who appreciate the extent of the problem of protecting the health of the industrial worker. I have here some astounding figures which were presented several weeks ago by Paul V. McNutt in a talk before the National Conference of Governmental Industrial Hygienists in Washington, D. C. He has shown that on an average, four hundred million working days are lost each year due to disease and injury in industry, by far the greatest part of which is due to disease. The implication for the war effort of these astronomical figures is impressive: if all the disabling illness and accidents struck tomorrow in our war industries, we would have to cease production for sixty-six days.

We should emphasize here that we should not consider the problem as the protection of industrial workers against only the specific occupational diseases attendant with certain industries, but against illness due to all causes. There is evidence that the morbidity and mortality rates of certain industrial groups are higher than in the general adult population or than in the industrial population as a whole. Studies conducted in a number of industries have shown a high incidence of certain diseases commonly considered as nonoccupational, such as tuberculosis, pneumonia, and the degenerative diseases. While it is true that much of the disease among wage earners is due to harmful dusts, vapors, fumes, chemicals, excessive temperatures, and faulty plant sanitation, yet we cannot disregard the effects of improper living conditions, hurry, strain, malnutrition, and communicable diseases.

Governmental and other agencies have recognized for some time the importance of the effects of industrial environment on the health of the worker and on the community as a whole. Soon after World War I, the U. S. Public Health Service formed its Division of Industrial Hygiene; since that time thirty-six states, four cities, and two counties have formed industrial hygiene units.

Industrial management has been stimulated to join the movement for the protection of industrial health by the growing recognition of its responsibility to protect the health of its workers, through the passage of workmen's compensation acts, and by the realization that among industrial workers, illness, much of which is preventable, causes at least fifteen times as much absenteeism as do industrial injuries. It has been estimated that the total cost of sickness in industry for the United States is five billion dollars annually.

The National Manufacturers Association has shown in a survey of 2,064 plants that by the provision of proper plant medical services and the application of preventive medicine, industrial absenteeism can be reduced 29.7 per cent. Other very significant savings which should be mentioned here are a reduction in the specific occupational diseases of 62.8 per cent; compensation insurance premiums are reduced 28.8 per cent, and labor turnover 27.3 per cent.

The medical profession has not been unaware of the importance of the protection of the health of the wage earner. In 1937, the Council on Industrial Health of the American Medical Association was established and many committees on industrial health have been formed in state and county medical associations. Physicians have begun to appreciate the opportunities in ethically managed industrial health programs and the mutual benefit to be derived from proper relationships between industrial and private practitioners. The private practitioner also is beginning to appreciate his opportunities among the 85 per cent of the industrial workers who are without the benefit of plant medical programs.

In Minnesota, in 1940, the Committee on Industrial Health and Occupational Diseases was formed in the State Medical Association. In 1939 the Minnesota State Legislature passed an act requiring the reporting of occupational diseases and authorizing the State Department of Health to investigate and make recommendations for the control of industrial health hazards. Early in 1940 an Industrial Hygiene Unit was formed within the State Department of Health to carry out this function. In July, 1941, the status of the

Industrial Hygiene Unit was changed to that of a full Division of Industrial Health.

The general function of the Division is to offer a medical and engineering advisory service to assist industry in the many technical aspects of the control of industrial health hazards. The broad outline of its program is as follows:

1. To receive and investigate reports of occupational disease.

2. To promote more adequate medical services within industry, such as the employment of full-time or part-time physicians and nurses, the provision of properly equipped first aid rooms, and the maintenance of sickness records.

3. To encourage the use of ethical pre-employment and periodic physicial examinations.

4. To confer with industrial physicians in regard to special problems or general industrial health programs. Special blood and urine analyses for evidence of industrial intoxication will be made when warranted.

5. To provide engineering personnel who are specially trained and equipped to make studies of plant environment (*e.g.*, air analysis for toxic vapors, gases, and dust, in an effort to determine whether the working atmosphere is safe or otherwise) and to make recommendations for the control of health hazards found. These studies will be made at the request of physicians, plant managements, the State Department of Labor and Industry, and others concerned with the health and welfare of the industrial worker.

6. To promote within industrial groups adult hygiene programs, such as the control of tuberculosis, syphilis, and other communicable or preventable diseases.

7. To prepare and disseminate information on various toxic materials and processes, and methods for their control.

Much of the success of this program depends upon the coöperation of the members of this Association. One means by which the members of the Association can coöperate most effectively is the reporting of occupational diseases, using the reporting blanks which have been recently furnished for this purpose. Obviously, these reports are important in pointing out conditions in industry which are hazardous to health, conditions in the control of which we may be of assistance.

PREVENTION AND TREATMENT OF HEAT COLLAPSE AMONG INDUSTRIAL WORKERS

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DISABILITY as a result of increased environmental temperature is of special interest to us at the present time. Our war effort demands every consideration toward the reduction in loss of time through accidents and preventable disease; conservation of health and increased efficiency are paramount. This may not be a new hazard to our armed forces but it is certain many of our troops are now being seasoned in far-off tropics. Review of the literature on heat injuries reveals many early contributions emanating from the territories to which our troops are moving, many over the period of only a few days.

It is important to recognize that excessive heat exposure is responsible for three typical maladies: one producing an expression as vivid as any emergency one may encounter in industrial practice known as heat cramps; another, a highly fatal condition, heat stroke, differing distinctly from the preceding condition. The third, heat exhaustion, manifests also an individual picture with a separate physiologic basis.

Briefly, these disabilities are due to a disturbance in the mechanism of heat production and heat loss, or control of body temperature. Heat production has its source, mainly, in the skeletal muscles of the body and is derived from the oxidation in the tissues. Heat loss is accounted for: 75 per cent through conduction and radiation and 25 per cent through evaporation from the lungs and skin. When environmental temperature approximates or exceeds the temperature of the body, conduction and radiation lose their role, the load being transferred to evaporation from the skin.

The total amount of salt in the human body is estimated to be about 150 grams; the daily in-

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take is from 8 to 12 grams. As much as twenty-five per cent of the latter may be lost in an hour under certain conditions. The important property of salt, especially the sodium ion, is in the osmotic regulation of the body fluids and juices. Of interest to us is the behavior of body water. The kidneys maintain an equilibrium of salt in the body even with the ingestion of large quantities of water. The sweat glands fail to suppress the excretion of salt in perspiration and considerable depletion occurs with excessive activity. With the abnormal loss of salt and coincident ingestion of large quantities of water, normal tissue fluids are replaced by fluid of different concentration. This is constantly associated with heat cramps, to a less degree in heat exhaustion and is absent in heat stroke.

Heat cramps occur in the early period of a hot spell, do not produce unconsciousness and follow extreme activity with profuse sweating and increased ingestion of fluids. The body temperature is normal. The most prominent symptom is a spasm of groups of muscles, subsiding for a period to recur with varying degree and frequency. The muscles of the extremities are the most frequently involved. Subjects indicate the pain as indescribably intense. In the severe case, the relief observed in replacement of salt through intravenous injection is striking. The milder cases require only oral administration. Patients are usually relieved after twelve to twenty-four hours.

Heat exhaustion presents a picture of shock and weakness. The individual is pale; the skin cold. The pulse is usually weak and rapid; the temperature is below normal. It is more frequent in the older age group and those handicapped by systemic disease.

Patients with heat stroke manifest a high temperature, 106 and above, unconsciousness and a dry skin. There is absence of sweating and its cessation occurs before the onset of an attack. Its occurrence is more frequent after the second and third day of a hot spell. No loss of chlorides is noted, its basis being a disturbance of the heat regulatory center. This condition is the most serious of the three and demands prompt measures toward the reduction of body temperature.

In general, the measures conducive to a good industrial health program include the prevention of heat collapse in the industrial worker. The periodic physical examination, including that after sick absenteeism and prompt report of illness on the job, needs greater attention during this season. Dietary indiscretion and alcoholism are frequently observed as factors in the incidence of heat exhaustion and heat stroke. Careful attention should be given by the employe to the meal carried to work in the lunch kit. Too frequently it contains food remnants inadequately stored or refrigerated. Education in the selection and preparation of this important meal has broad possibilities in the hygienic program. Adequate rest, often obtained with difficulty, during protracted periods of hot weather, should receive consideration.

Sufficient experience in the use of salt in the prophylaxis against heat cramps in recent years has proven its value. The use of the tablet is the most practical method of administration under most circumstances. The coated tablet appears to meet with more favor. In the treatment of heat exhaustion, facilities should be available where adequate examination and observation may be carried out.

Of major importance in the management and control of this serious disability is the necessity for a sound industrial health program under the supervision of an efficient and well-organized medical service.

Appreciation is extended to the Industrial Relations Department of the Carnegie-Illinois Steel Company for the presentation of their interesting sound film on "Beat the Heat."

POLIO INCUBATION PERIOD AVERAGES TWELVE TO THIRTEEN DAYS

Infantile paralysis takes from twelve to thirteen days, on the average, to develop after a child has been exposed to the disease, Dr. Albert E. Casey, of Birmingham, Ala., reports (*Jour. AMA*, Nov. 14).

This period, known scientifically as the incubation period, varied from five to thirty-five days in the thirty-seven cases Dr. Casey studied. The twelve-thirteen day incubation period is compatible, he reports, with that in eleven cases reported in medical literature and with the incubation period in monkeys or chimpanzees inoculated with freshly isolated human strains of the infantile paralysis virus.—*Science News Letter*, November 21, 1942.

DIET AND MUSCULAR FATIGUE

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IT is common knowledge that in order to do work one must eat. In total starvation muscular efficiency and work capacity fall continuously. Food is the source of the energy for work. We must admit, however, that our detailed knowledge of the function of many foods is scanty. Most everyone will agree that certain classes of foodstuffs—as glucose, amino acids, fatty acids, minerals, vitamins, and water—are absolutely necessary for normal metabolism. But what effect does maximal or minimal daily intake of the various dietary constituents have on the human ability to do muscular work? Can one do more work or prevent the onset of muscular fatigue by following any special dietary regime? Scientists have long known that carbohydrates —specifically glucose—play a major role in muscle metabolism. It was recognized that tiredness, fatigue, and, in extreme cases, even collapse occurred when the blood sugar was depleted. Men kept on a low carbohydrate diet soon exhibited decreased muscular efficiency and ability to do hard physical work.[24] In experiments on the efficiency of industrial workers[11,12,13,14] it was found that when the blood sugar was low, the muscular efficiency—and consequently the output—of the workers decreased. When the blood sugar and muscular efficiency of the workers had fallen to fasting levels, as they were found to do within three hours after the last meal, the ingestion of 30 grams of glucose or 225 c.c. of fruit juice raised the blood sugar 75 per cent and the muscular efficiency 25 per cent. From this evidence it appears justifiable to conclude that the total amount of work and the efficiency with which one can do it are decreased when the blood sugar falls below some optimal value. There is, however, no evidence that in normal humans fatigue can be delayed or decreased by maintaining a superoptimal blood sugar level. One might, also, criticize the results of the experiments on the industrial workers on the basis that it has been shown[30] that almost anything one does to change the worker's routine will increase output.

The role of the fats and proteins in work and fatigue is not firmly established. When men were kept on a high fat diet they were less efficient and fatigued faster. However, this finding may have been related to the relatively lower carbohydrate intake. Protein intakes up to 500 grams per day have been investigated. The subjects were more efficient on the high protein diet than on the high fat diet, but were not as efficient as when the blood sugar was kept at high levels by giving carbohydrates.[12] Numerous papers have appeared on the value of a high glycine diet. Some of the investigators found that work output could be increased up to 200-300 per cent by a daily intake of 10 to 50 grams of glycine.[1,4,32] In other laboratories the beneficial effects of glycine could not be confirmed.[15,17,21] Consequently, it remains for the future to show the true importance of the amino acids in muscle metabolism.

Amphetamine sulfate (benzedrine) has been used rather widely to postpone the onset of fatigue and to lessen its symptoms. Research has in part, justified its judicious use. It has been shown that 10 to 20 mg. of benzedrine sulfate given to patients complaining of chronic fatigue markedly improved 80 per cent of them. In a group of 80 normal people 62 per cent of those receiving the drug recorded subjective feelings of decreased fatigue and increased efficiency while only 16 per cent of those receiving placebos recorded any subjective help[29]. Benzedrine given 3½ hours before the end of the working day increased the flicker fusion frequency and decreased the sense of fatigue in a group of office and laboratory workers[34]. Doctor Ivy [18] has concluded that the diminution of the sense of fatigue by benzedrine was entirely a subjective phenomena. This might cast some doubt on the ability of benzedrine to influence true muscular fatigue.

The use of coffee, tea, and "cokes" to combat fatigue is a common practice. One might be tempted to think that the popular mid-morning coffee and afternoon tea habit might reflect something a bit more fundamental than accidental habit. Caffeine[5] has been shown to prolong the onset of fatigue and increase the total work out-

From the Laboratory of Physiological Hygiene, University of Minnesota. Presented at the annual meeting of the Minnesota State Medical Association, Duluth, Minnesota, July 1, 1942.

put of an isolated frog muscle. In the normal noncoffee drinking human it took from 0.5 to 1.0 gram of caffeine intravenously to produce any subjective or objective effect on fatigue[9]. With such high doses the recovery rate from fatiguing work and the total amount of work that could be done before complete fatigue were increased. If it takes about 1 gram of caffeine intravenously to be effective, it hardly seems logical that the average coffee drinker would get enough caffeine to have any alleviating effect on fatigue.

Of particular interest is the part played by the vitamins—especially ascorbic acid and thiamine—on muscle metabolism. There is no doubt that the vitamins are dietary essentials for maintaining normal muscular activity. The recognition that an increased intake of vitamins will increase the physical vigor of frank vitamin deficiency cases has given rise to the belief that a superabundance of these vitamins may produce supermen or at least help one in meeting physical strain. Research on isolated muscles has led a few investigators to believe that ascorbic acid and thiamine will increase the ability of a normal muscle to do work.[2, 3, 16, 27] Others, however, were unable to confirm the results.[20, 33]

Experimentally induced thiamine deficiency in human subjects has produced interesting results. When subjects were kept on a diet adequate in all respects except thiamine (0.5 mg. or less per day) they developed clinical symptoms of thiamine deficiency including muscle soreness, weakness, and a decreased ability to do work [8, 19, 26, 35, 36, 37] As the daily thiamine intake was progressively increased a level was attained where the clinical symptoms disappeared and the work capacity was increased. When still higher doses of thiamine were given to these subjects on intakes just sufficient to prevent deficiency symptoms, the amount of work the subjects could do seemed to be further increased. Clinical symptoms disappeared on thiamine intakes of 0.5 mg. per 1,000 calories while maximal benefits were obtained with not more than 1 mg. of thiamine per 1,000 calories. Thiamine intakes of that order fall within the 1.2 to 2.3 mg. per day, suggested by the Committee on Food and Nutrition of the National Research Council.[31] Food purchase surveys have shown that from 30 to 50 per cent of the American diets would fall into the sub-clinical deficiency class receiving less than 1 mg. thiamine per 1,000 calories.[6, 7] It would be expected then that a great many people should be helped physically by an extra thiamine intake. Addition of up to 15 mgs. per day of thiamine to uncontrolled human diets has been reported to improve such muscular performances as holding the breath, arm-holding, cycling, and football playing.[10, 25, 28] However, the results can be justly questioned because the experiments were poorly controlled.

Doctor Ancel Keys and I[22, 23] have carefully investigated the possibility of increasing work ability by vitamin supercharging. The subjects were healthy, normal enlisted men of the United States Army who were eating the regular garrison ration. Analysis of the ration showed it to be sufficient in all respects. The thiamine content was not less than 1.7 mgs. per day's ration. Increasing the daily vitamin intake by 17 mgs. of thiamine, 100 mgs. of nicotinic acid amide, 20 mgs. of calcium pantothenate, 10 mgs. of riboflavin, 100 mgs. of pyridoxine, and 200 mgs. of ascorbic acid over periods ranging from 5 to 6 weeks had no effect on the subjects' biochemical and physiological response to a set task of severe work. Each subject was on a control period which was identical to his experimental period except that he was given placebos identical in size, shape, and color to the vitamin tablets. In this way each subject served as his own control so that individual variations were eliminated. The variables measured to assess the effects of the vitamins were pulse rates, heart size, stroke output of the heart, oxygen consumption, respiratory quotient, urinary nitrogen and ketone body excretion, blood glucose, blood lactate, hemoglobin, blood acetone, and two-hour glucose tolerance curves. Except for a slight training effect none of the variables measured were significantly different during the control and the experimental periods. Only one subject expressed any subjective improvement and that happened when he was on the placebos.

The garrison ration contained the suggested optimal thiamine intake, consequently the experiments did not cover the subclinical thiamine deficiency levels which might, according to some other investigators, be benefited by increased thiamine intakes. We have now finished a series of experiments on normal active college men who have been kept on the suboptimal thiamine levels for periods ranging from five to ten weeks. As with the soldiers each subject has served as his

own control. The subjects ate only the basal diet. During half of each experimental period they received extra thiamine and during the other half they got placebos. Thiamine determinations were run on the diet every day and twenty-four-hour urinary thiamine excretions were done each week. One-half day each week each subject was subjected to a standard routine of severe muscular work. Complete blood chemistries were run before and after each work period. The results indicate that the ability to do the set task of work was the same when getting extra thiamine as when on the basal diet alone. No symptoms of deficiency were noted. These experiments indicate that thiamine intakes of more than 0.3 mg. per 1,000 calories of food consumed have no effect on the ability of a normal person to do severe muscular work.

Summary

Although special benefits from special foods have often been suggested for normal humans, there is little evidence that the special benefits are actually obtained.

Extra supplies of vitamins have no influence on physical ability, resistance to fatigue or the rate of recovery from severe muscular work.

The usual dietary constituents are essential for normal muscular activity and physical well-being. However, the optimal intakes of the various foods are not fully established. By following the recommendations of the Committee on Food and Nutrition of the National Research Council, basic food requirements for all normal needs would be amply fulfilled. Even though the recommendations may in some cases exceed the optimal requirements, it is comforting to know that the results of a superoptimal intake are nothing more serious than a waste of money.

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Normally humans absorb 70 per cent of the *carotene* in raw carrots or cooked spinach, furnishing them with vitamin A, but this drops to 50 per cent if there is no fat in the diet.

FIRST AID TO THE INJURED WORKMAN

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IT IS gratifying to one who has been associated with industry for some time, to see the increase in interest shown towards the first-aid care of the injured workman. I think the impetus for this has been due in part to the increasing number of lay people who have taken first-aid courses. These courses not only have had an effect in preventing accidents but also have given the layman an appreciation for the care of the injured, which I believe can be obtained in no other way. I think it fitting, therefore, that we as medical people take advantage of this situation so that the care of injured workmen will be improved still further. In the past, this problem has been the concern principally of larger industries. However, the same care can be carried out in small industries where we have some of the workmen trained as first-aiders. Industry has been in a unique position in that it has had an opportunity of controlling the injured workman from the time of the inception of the injury until he is completely healed. This is a situation which does not present itself to men who see injuries in private practice.

First aid always begins by preventing accidents. One of the best ways to prevent accidents is by having a careful physical examination of all employes before they start to work. This examination should be repeated if the employe has had a serious injury or accident. In organizing any first-aid procedure for injured workmen, men should be picked who not only have had first-aid instruction but who have practical ability for taking care of an injured man. In a large plant where an official first-aid station is maintained, probably manned by a graduate nurse or a doctor, this is not necessary. Instructions for first-aiders should be extremely simple, clear-cut and of such a nature that they can be understood by any workman. These instructions can be improved by having illustrations or pictures showing the use of certain equipment, such as bandages, splints and so forth. It may be that the specific instructions of a surgeon for a specialized type of industry are necessary but in general all instructions should be simple. First-aid kits are essential.

In the electric industry, we have kits to fit each truck where there are small crews. In these kits are bandages and other equipment, most of which have illustrations in the form of pictures showing how the equipment is to be used. I believe a first-aid kit should contain sterile gauze compresses of varying sizes, bandages, splints, and possibly a tourniquet. I think this makes an excellent first-aid kit. Employers and employes alike should realize that the day when the injured workman dashes to the medical kit and pours some iodine or other antiseptic into a wound and then forgets it, has passed.

We should also appreciate that we are not making doctors out of first-aiders. All wounds regardless of size and the embarrassment of the employe sustaining the wound should be reported and taken care of. It is a well-known fact that serious complications more frequently follow small wounds than large wounds. In many industries, men are penalized in some way for not reporting any and every wound. In treating these wounds we should impress on the workman who has received one that nothing should be done which will increase injury in the first-aid care.

This brings up the matter of antiseptics. Koch's influence in the treatment of wounds has changed our methods of procedure quite radically. If doctors as well as laymen would realize that the pouring of any antiseptic into a wound only increases the injury already done, first aid would be improved. Any antiseptic can do just as much injury to the tissue cells as it will to the bacteria. If the tissue cells are destroyed or injured, their natural defense mechanism has been impaired and an excellent medium for the growth of bacteria has been set up. Furthermore, Frederich has definitely shown that bacteria do not penetrate the tissues for the first six hours. With these facts in mind I do not believe wounds should be treated with any antiseptic by a first-aider. I feel that the proper thing to do for

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such wounds is to cover them with a sterile compress holding it in place by some form of bandage and get the patient to the doctor or hospital as soon as possible. I do not believe the first-aider should go so far as to clean dirt, grease or debris off a wound before applying sterile gauze. This just increases the trauma and therefore increases the possibility of further damage to the wound. In general, the dressing used for the wound should be large enough to more than cover it, the tendency of most workmen being to apply too small a dressing to a wound. Further than this we need not worry about anything except the control of hemorrhage as a first-aid procedure.

This brings up the fact that most surgeons realize that the tourniquet does more damage than good in the hands of the average first-aider. I certainly heartily agree with this fact. I think it should be impressed on first-aiders that hemorrhage in general from wounds can be controlled by pressure of the bandage over the sterile gauze compress on the wound in most cases. Rarely will a tourniquet have to be used. If a tourniquet is used, I think it should be used with the same materials and at the points designated in the *First-aid Manual* put out by the Red Cross, for the sake of uniformity. Most of the damage done in the late war by tourniquets was because of the long time which they were applied. This is obviated in industry because of the proximity of the patient to the doctor or a hospital in this state.

I do not feel as a first-aid procedure that foreign bodies in the eye should be removed at the site of an accident by an employe. In this situation, I feel the eye should be properly covered and the patient taken to a physician.

In the first-aid treatment of burns, we must remember that they are wounds just the same as any other wound. It is my policy in extensive burns to minimize the first-aid treatment as follows: the patient should be covered by a sheet or blanket, kept warm, recumbent and transported to a hospital as soon as possible. In other words, I do not believe the shock should be increased in any way by a layman attempting to apply some ointment or liquid to a burn. In the majority of cases, they would not have enough material to cover the burn and in the next place the doctor as a rule has his own definite ideas about the care of specific types of burns. If the burn is small I believe it should be properly covered by a sterile dressing like any other wound. In no case do I feel any ointment or other material should be applied to the burn by a first-aider. This might be changed in cases where a dressing room manned by a nurse is established at the industry. It must be remembered that a covering over a burn will minimize pain to a great extent. In some severe burns, the doctor may have to be called to administer an opiate before the patient is moved.

Artificial respiration is an extremely important first-aid procedure in industry where asphyxiation is possible. I believe the prone pressure method described in the Red Cross *First-aid Manual* is the best procedure because of its simplicity and the fact that no equipment is required. All employes should practice this frequently, particularly in the electric and gas industry. More recently in the electric industry, we are teaching what is known as pole-top resuscitation. This is a procedure which can be carried out at the top of a pole where many of our electric accidents occur. The results have been extremely gratifying because there is little time lost between cessation of breathing and artificial respiration. The prone pressure method in the same accident could not be started until the patient reached the ground, which is a matter of at least three minutes.

Considering fractures, from a first-aid standpoint, I wish to call your attention to the work done by the Fracture Committee of the Minnesota Medical Association, which was reported in the November issue of the MINNESOTA MEDICINE for 1941. I do not believe that there is any deviation from the opinion that fractures should be splinted where they lie and before they are moved. Where a First-aid Station is manned by a doctor or a nurse this is simplified. The problem is how best to teach this to first-aiders, in the case of smaller industries. If we combine what is given in the *First-Aid Manual* put out by the Red Cross, plus the changes made by the Committee from the Army, Navy and American College of Surgeons, I think we can arrive at a few simple rules. All individuals with skull fracture and head injuries should, of course, be transported lying flat on their back. The same applies to the cervical spine; whereas, those with fractures of the thoracic and lumbar

spines should be transported on their belly. In the case of neck fractures proper support should be given to the head. This is a very simple and definite rule and I do not believe it should be changed. First-aiders should furthermore be impressed with the fact that those with head injuries or fractures of the spine should not be set upright or jack-knifed in the back seat of a car. If they understand the reason for this, first aid will be improved. Fractures of the upper extremities, I feel in most cases, can be taken care of by some simple padded splint, such as a board or metal splint and the use of a sling. The Navy apparently took exception to the use of the full-ring hinged splint for fractures of the arm. They believe that in fractures of the humerus the arm should be placed in a sling and let gravity take care of the fragments where the victim can sit up or stand. I do believe, however, that in civilian practice, there is no danger from the pressure of a full-ring splint where the distances to the hospital, as I have stated before, are short. Fractures of the lower extremities are best taken care of without question in a half-ring hinged splint. Fractures of the ankle and foot in my opinion are best immobilized by the use of a pillow splint.

In connection with the ring splints, as mentioned above, I wish to call your attention to the fact that due to the efforts of Dr. Webb and his Committee, an ordinance has been passed in Minneapolis whereby the ring splints for both the upper and lower extremities are carried in all ambulances. The ambulance not only must have the splint but the ambulance attendant must be able to apply it before he is able to obtain a license to operate an ambulance. This does not make it necessary for the men in Minneapolis to carry splints in their cars. However, I believe it would be a good plan for any doctor dealing in fractures to carry such splints. I would suggest that you read this ordinance which has been recently passed in Minneapolis and possibly use it for a model in your own communities for a similar ordinance.

In conclusion, I wish to state that first aid can be brought to smaller industries by the instruction of lay people provided the rules are simple and instruction is limited to first aid and not treatment.

WHAT THE MEDICAL PROFESSION CAN DO TO INCREASE SAFETY AND HEALTH IN WAR INDUSTRIES

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DOCTOR GEORGE McLEAN is dead. He died the other day at a ripe old age. He died in sunny California—far from the windswept prairies of Dakota Territory, where he practiced medicine in the eighties and nineties of the last century.

Through the years I have retained a distinct interest in "Doc Mac"—as he was known far and wide. He officiated at my advent into the world, my immediate world then being a log structure with a sod roof. He also was on hand when my older sisters and brothers came along. It seems that our birthdays were all arranged for the summer and early fall so that the snow-blocked trails of winter would not bog down Doc's fast-traveling horses. The day came when Dr. George McLean decided to pull up stakes and move elsewhere.

I clearly recall him driving up to our new house one summer's day. He was driving his span of high-stepping bays which were the envy of every lover of horse flesh. Tied to the back of his buggy was his beloved organ—a beautiful solid walnut affair which he had brought on from his native Vermont. He threw the reins to his driver and leapt from the buggy. He was short of stature and purposeful in stride. It could be said of him that, like Napoleon, who he tried to emulate, he would appear to be "strutting while sitting down."

"Nels," he said to my father, "I am moving

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on to new pastures." My father wanted to know why. "Well," he said, unmindful of us children who circled the two men, "these goddam specialists are beginning to crowd me. They have fancy, hifalutin' names for a lot of plain ordinary aches and pains and I'll be damned if I am going to stay around and have my patient's force me to become one of them. I am giving you my organ for your new house and I won't be around to see any more Wolds into the world."

And so, Dr. George McLean moved a hundred miles farther West—where the specialists were unknown. Later on we heard that he had moved still farther West, for the same reason, I suppose. But he gave the organ to my father and he also parted with the one sheet of music he was able to play. On that sheet of music was the picture of the famous Corsican whom he idolized, and the title was "Napoleon's March." Yes, Doc Mac was on the march, constantly on the march. And now he is dead. When he died an era went with him to Valhalla. It was the era of the old-time, horse and buggy, family doctor. The only reason I have for relating this episode out of the past is to enable me to put the question: "Is there a doctor in the house?" Or are you mostly specialists here today?

Today there are a lot of doctors "on the march." They are on the march into the Army, the Navy, the Marine Corps. When the Specialists in Destruction—Hitler, Mussolini and Hirohito—are on the loose, our tremendous armed forces are going to suffer the inevitable ills and injuries of mechanized warfare. In 1940 the Army had 1,200 doctors in service; in this year of 1942 the number will increase to 15,000 and in 1943 it is anticipated that 33,000 doctors will be in Army uniform. The Navy will have 10,000 or more. In 1944 it is expected that 60,000, or one-third of the country's 180,000 doctors, will be in service.

This means that in so-called favored areas each 1,000 civilians will have to get along with not more than three doctors and in rural areas each doctor will find some two thousand civilians on his hands. Under such circumstances there is not going to be a great deal of room for the specialist—every doctor in 1943 and 1944 is going to find himself becoming a family doctor. More and more as we get into this War we will find it becoming a family affair in this country. One or more members of the family will be in the armed services; one or more members of the family will be engaged in war production work; other members of the family will, because of age or physical conditions, either be attending school or maintaining the home. That is the situation in totally mobilized England; that is the situation we will have to accept here. It is to be assumed that the armed services will have proper and adequate care. Are the remaining doctors going to be able to maintain present health standards on the home front?

Let us see what has happened to the so-called home front in Germany. The health of the German people has been undermined by years of hard work, long hours and malnutrition. The population of Germany is approximately 85,000,000; that of the United States about 133,000,000. Comparative figures for the two countries on three outstanding diseases can be enlightening. The statistics on Germany are from the *Reichgesundheitblatt.*

Diphtheria

	Year	Cases	Year	Cases
Germany	1939	128,897	1941	154,752
United States	1940	18,061	1941	15,536

Scarlet Fever

Germany	1939	119,730	1941	226,735
United States	1940	155,464	1941	128,490

Tuberculosis

Germany	1939	69,502	1941	88,312
United States	1940	103,348	1941	106,372

The mortality rate from tuberculosis increased, in Germany, from 81.8 to 104 per 100,000; in the United States it decreased from 44.4 to 42.2.

Looking no farther ahead than the next two years we will find that rationing of fuel may make our homes much colder; rationing of tires and gasoline will, very likely, reduce participation in healthful recreational activities. We have had some rationing of food and may get more restrictions. High prices on clothing are in the offing unless "ceilings" are put into effect. All these factors are going to affect the family health.

The doctor's home front problem of maintaining present health standards will steadily increase as we approach the 100 per cent total mobilization point. Perhaps one of the bigger problems will be that of the mother who is now working in a war production plant and trying to maintain her home on an even keel at the same time.

Two months ago we had some 400 Minnesota plants engaged in war production; today, two months later, the number has increased to over 700. Day by day men and women are leaving accustomed tasks and going to new and untried war work; day by day the percentage of women going into industrial work is growing. The problem of the plant safety engineer is becoming more complicated; the problem of the doctor will become more complicated too as he finds his work steadily veering into industrial ills.

I want to try to give you a word picture of the prodigious war production program in which our country is engaged. The facts are stupendous—but they are facts and not figments of the imagination. Let us take SHIPS. In 1942 and 1943 the program calls for 23,000,000 tons of ships. Not navy ships but merchant ships. And they are being built on schedule—and ahead of schedule. Out on the Pacific Coast one shipbuilder is now turning out a 10,000-ton ship every 46 days. If you were to put the ships we are building in a row you would have a 5,000-ton ship for every mile between Duluth and Moscow—a distance of 4,600 miles!

Let us take anti-aircraft guns. The war production plants of the United States will be rolling out 65,000 of the "ack-acks" this year and next. This means—if you want a visual picture—that you could place an anti-aircraft gun every 13 feet between Duluth and the Twin Cities and have several to spare.

And tanks—armored tanks rolling on rubber caterpillar tracks and bristling with high-powered guns—are now rolling out of the factories at a greatly accelerated rate. This year and next we will turn out 125,000 of them. Not small baby tanks but gigantic tanks which will shudder the earth as they roll along.

Start, if you please, at New Orleans and in Louisiana, where so many of our boys are in training camps and your procession of tanks—with 10 feet between them—will lead up through Arkansas, Missouri, Iowa, Minnesota and up to Winnipeg—a continuous line of rumbling, grumbling mammoth tanks from the Gulf of Mexico to the prairie capital of our Canadian ally. Turn these tanks at right angles and they would sweep forward in a solid rank—a tank every 65 feet.

Perhaps the pictures of ships, anti-aircraft guns and tanks—the stupendous job of producing them—hasn't fully impressed you. So let us consider the airplanes we produced in 1941, are turning out in ever-increasing numbers this year, and the production scheduled for next year—1943.

Let us start in New York Harbor—at the base of the Statue of Liberty—and place the planes wing tip to wing tip. You can walk on the wings of the planes and step from one plane to the next and how far do you think your trip will take you? You will pass through New York City—the world's greatest assembly of human beings—on into Pennsylvania—with her vast stretches of coke ovens and blast furnaces turning out munitions of war from the ores of Minnesota. You will pass on into and through Ohio—and you will think of the rubber factories at Akron and the great Curtis-Wright Field at Dayton—and you will think of the Wright brothers as you leave Ohio for Indiana—the home of the great steel plants at Gary—again working on iron ore from Minnesota's great Iron Range. You are still walking on the wings of a solid row of planes as you pass through the great industrial districts of Chicago and Illinois. Have you come to the end? Oh no. The solid row of planes reaches out ahead of you through Missouri through the expansive wheat fields of Kansas, through Colorado and Denver—where ocean-going ships are being built piecemeal and being shipped to the Coast for Assembly. The end is not yet. The solid row goes on and through Utah, through Nevada and on to the great airplane plants of California—where in two plants alone 60,000 workers in each are helping turn out this solid row of planes on which you have crossed the continent. Two hundred thousand planes in 1941, 1942 and 1943. Wing tip to wing tip they would stretch across the entire United States and a hundred miles into the Pacific!

Airplanes can travel by air and ships can travel by sea but the raw materials for the munitions of war have to be shipped by railroad. Over a million workers—hardbitten railroad men—have been so well trained that when the emergency came they were ready. Today the railroads of the country are hauling over one million tons of

freight a mile every minute of the day and night. Within a period of seven weeks following Pearl Harbor 600,000 soldiers were moved—with their guns, armament and war equipment—from the training camps to both coasts. And only one soldier out of the 600,000 lost his life. Every day 16,000 freight trains, containing some 1,700,000 freight cars, are on the move over the 235,000 miles of railroad in this country. Since the last World War the railroads have spent over $11,000,000,000 improving their equipment and service. The average locomotive pulling power has been increased 43 per cent and locomotive failure is one-seventh of what it was during the last World War. The average freight train speed has been increased 45 per cent and the average freight car capacity has been increased from 42 tons to fifty. At the same time freight car failure has been cut to one-fifth of that in the last World War.

Since the last World War the railroads of the country have set the pace in the reduction of deaths and injuries to their employes. From 1923 to 1940 fatalities were reduced 72 per cent and injuries 88 per cent. In 1941 with the tremendous burden of transporting the munitions of war laid on them the downward trend stopped and reversed itself—an increase over 1940 of 6 per cent in each category was noted. The outstanding example of reduced accident rates despite a great increase in tonnage hauled is that of the Duluth, Missabe and Iron Range of which your chairman, today, Mr. A. V. Rohweder, is safety superintendent. It has a frequency rate of 1.76.

It can be readily understood that one of the critical problems facing industry is the matter of conversion of peacetime industry to a war footing. Hundreds of plants which last year were manufacturing radios, kitchenware, refrigerators, toys, heat-registering devices, clothes pins, etc., are today turning out bomb sights and bombs, cartridges, tanks, rifles and guns, airplanes and small ships. That means new designs, new machinery, new methods. But that is just plant conversion. An equally large problem has been the retraining of old employes and the education and training of new ones. The stenographer of last year is the spotwelder of today; the operator of a small lathe in a toy factory of yesterday is now at the controls of a tremendous press in a shipyard.

The experience of England in converting plants and manpower to wartime needs is worthy of study. The 1940 annual report of His Majesty's Chief Inspector of Factories gives us some revealing figures. There was a great increase in both fatal and nonfatal accidental injuries. The fatals increased 7 per cent in 1939 over the figure for 1938; in 1940 the increase was 24 per cent over that for 1939. Nonfatal injuries increased 17 per cent in 1939 over 1938 and 20 per cent in 1940 over 1939. An interesting contrast to this distressing experience was that of plants which had installed efficient accident prevention and health conservation departments. Accidents decreased progressively downward per 100 employes as follows: 1937—0.94; 1938—0.95; 1939—0.75; 1940—0.66. Indications are that more than 40,000 civilians have been killed in England, since the start of the war, by air raids. The increase in industrial accidents and fatalities cannot be attributed to air raids but the ever-present danger of air raids has drastically affected the working methods of British war plants.

Many plants are actually operating in the open in order to avoid the danger of collapsing roofs. These plants cannot be operated at night. Other plants operate with blacked-out windows and doors. This means that the ventilation problem has become a serious one in British industry. Almost every plant is required to maintain bomb shelters for its employes.

Long hours of work began to have inroads on the health of the workers. In plants which operated the clock-around and where employes were permitted to work from seventy-two to eighty-four hours per week absenteeism increased. On any one day from 15 per cent to 25 per cent of the persons employed were absent. Gradually the work week has been reduced to fifty-six hours and absenteeism has become negligible. Time does not permit to go into the travail of Britain's industrial experience—but here are some of the things which industry and medical profession have had to contend with: absence of the mother from her home while at war work; transportation of workers; board and lodging of transferred workers; day nurseries for children of war workers; malnutrition due to inadequate food supplies or to improper preparation of available food. These things are mentioned as signposts for industry, safety engineers and the medical profession in our country.

Many of our workers are now living in trailer

camps. Roads are muddy and grounds are soggy. School facilities are lacking. Sanitation is far below health standards. Taverns, dance halls and "red light" districts adjacent to war production plants have prompted the Government to issue warnings to over 8,500 of these plants. A worker lost to production because of disease, due to these conditions, is as much lost as if he had been seriously injured in an industrial accident. I can merely point to this situation and direct it to the attention of safety engineers and doctors. The doctors of today and tomorrow are going to be fewer in number; they are going to have more to do and less to do with.

In 1941 there were 17,000,00 industrial workers in this country—an increase of approximately 3,000,000 over 1940. The figures for 1942 are not available but the total is in the neighborhood of 20,000,000. The records disclose that the 17,000,000 in 1941 lost an average of nine and one-half days each due to illness and accidents. This amounted to 160,000,000 man days of lost industrial work. On the basis of today's wages in industry here was a loss of wages well in excess of one billion dollars. But, more important than the wage loss was the loss in productive power so necessary to get out the vitally important implements of war.

Safety engineers are concentrating on the job of holding accidents in check. The National Committee for the Conservation of Manpower in War Industries is having its inspectors check all war production plants. Plant after plant has set up safety programs. Here in Minnesota the Committee is working with the State Industrial Commission and the Industrial Division of the State Board of Health.

In the matter of illness of industrial workers we have, however, a long row to hoe. With five to ten million of our citizens going into the various branches of the service and away from the industrial locations, it may be that the doctors will want to concentrate more on industrial workers than they have heretofore.

The first thing the medical profession should do is to make a self-diagnosis. A medical diagnosis may turn up anything. In this case you know what you are looking for. You are trying to find out how much, or how little, you know about industrial health. You have had patients from industrial plants; have you had industrial plants as patients? You have realized, I am sure, that in your examination of a sick or injured industrial worker that so far as preventive medicine is concerned you would like to take a look at the work environment of the patient. So, do you take a trip out to the worker's place of employment? The record says that you do not. You cure or mend the patient—if he is curable or mendable—and pass on to the next patient. Subconsciously you think that you must find out something about the working condition of plants in your town—some time. Well, some of you have picked up the ball and carried it from that point; most of you have not.

Some day an industrial plant, with an assortment of aches and pains, may want you to diagnose its ills and prescribe a cure: a cure, say, for a condition which produces absenteeism due to illnesses. But your quick self-diagnosis tells you that you are not the "doctor" for this job. You realize that you don't know what it is all about. You do one of two things: you leave the field to the industrial hygienist or the industrial doctor, so called, or you really begin to dig into this business of preventive medicine so far as the industrial workers in your town are concerned.

The modern industrial health program in a progressive factory is likely to include most, if not all, of the features enumerated below. These features are listed to show the points at which the doctors can be of service to help prevent accidents and control health conditions. These features have been developed in a survey of 2,064 industrial establishments by the National Association of Manufacturers:

1. A program of accident prevention.
2. Exhaust ventilation for dust, fumes or gas control.
3. Plant housekeeping and sanitation program.
4. Room(s) for medical examination and emergency treatment.
5. Maintenance of locker rooms.
6. Pre-employment physical examinations of all empoyes by doctors—industrial.
7. Maintenance of a restroom.
8. Records of all absences and illnesses.
9. Fatigue prevention program including refreshments available.
10. Employe hospital insurance.
11. Provision for recreational athletic activities.

12. Periodic checkup of illumination of work surfaces.

13. Pre-employment physical examinations of office employes by doctors.

14. Workroom temperature supervision.

15. Periodic check-up of physical examinations of factory employes.

16. Registered nurse in the plant at regular scheduled hours.

17. Maintenance of a lunch room.

18. Health education of employes to prevent ordinary illnesses.

19. Employe mutual benefit association.

20. Doctor in the plant at regular scheduled hours.

21. Fatigue prevention program including posture chairs or aids.

22. Fatigue prevention program including regular rest or relief periods.

23. Periodic check-up of physical examinations of office employes.

I have tried to give you a word picture of the tremendous war program our country is engaging upon. No one, I am sure, can be blind to the fact that with conversion from peacetime to war work living conditions will be radically affected. Heath standards will come down; we are battling to hold industrial accidents in check. Equally important are off-the-job accidents on the highways and in the homes. It is going to be the job of the safety engineer to organize for accident prevention; it is going to be the job of the doctor to get the injured man back to work as soon as possible. I do not think the injured worker will want to malinger in these days of high wages.

The National Committee for the Conservation of Manpower in War Industries is glad to have the active support, in its accident prevention and health conservation work, of the Governor and other leading citizens of Minnesota. President Roosevelt has expressed his concern over the problem. On August 18, 1941, he said:

"The nation is confronted with a rapidly rising accident toll. By taking a huge toll in life and property, accidents definitely hinder our national defense effort. To insure maximum efficiency we must have maximum safety twenty-four hours a day—not only at work, but also on the highway, at home, everywhere.

"The troubled times in which we live must not make us callous or indifferent to human suffering. These unusual times require unusual safety efforts.

"I . . . call upon . . . every citizen, in public or private capacity, to . . . do his part in preventing wastage of human and material resources of the Nation through accidents."

On March 20, 1942, the President felt impelled to speak again. He then said:

"It is obvious from the very magnitude of the toll in deaths and injuries that accidents constitute one of the serious impediments to our war production—to extend accident prevention work more widely throughout the country is, therefore, a national necessity at this time (and) . . . must be regarded as an integral part of our national war effort."

This terrible war will come to an end some day. But it may not be soon. When the hostilities cease we shall have a multitude of postwar problems. I rather like the so-called "Bill of Rights" set forth by the National Resources Planning Board as the things for which we should strive in this country. I am going to list them and I direct your attention to the field of work open to the doctors of the United States. Here they are:

1. The right to work usefully and creatively through the *productive* years.

2. The right to fair pay, adequate to command the necessities and amenities of life in exchange for work, ideas, thrift and other socially valuable service.

3. The right to adequate food, shelter, clothing and *medical care.*

4. The right to security, with freedom from fear of old age, want, dependency, *sickness,* unemployment and *accident.*

5. The right to live in a system of free enterprise, free from compulsory labor, irresponsible private power, arbitrary public authority and unregulated monopolies.

6. The right to come and go, to speak or be silent, free from the spying of secret political police.

7. The right to education, for work, for citizenship, and for *personal growth and happiness.*

8. The right to equality before the law, with equal access to justice in fact.

9. The right to rest, recreation and adventure; the *opportunity to enjoy life* and take part in an advancing civilization.

At the opening of my talk I used my recollection of the pioneer doctor to point out that the

old-time family doctor may be on his way back. The problems which confront industry in wartime production do not call for specialists. The accidents which occur with their resultant injuries and the diseases which grow out of unhealthy working conditions are not such as would be strange to the family doctor. Our problem is not in the big plant employing hundreds and thousands of workers. These plants generally have men at the top of management who are seeing to it that they are organized to cope with the problem. They have safety engineers and industrial doctors on the job. Where we need the coöperation of the medical profession is in the problem placed before us by the hundreds of small plants which, so far, have felt that they cannot afford to employ safety engineers and industrial doctors. A key worker in one of these small plants becomes a very important missing cog in the machinery of production when he goes home because of an injury or an illness.

And so, the biggest and most important help the medical profession can give the war industries of the United States is to coöperate in keeping the worker at work. I ask for 100 per cent teamwork between doctors and safety engineers in this task. Kipling expressed my thought:

"It ain't the guns nor armament nor the funds that they can pay
But the close coöperation that makes them win the day.
It ain't the individual nor the army as a whole
But the everlastin' teamwork of every bloomin' soul."

CARCINOMA OF THE GALL BLADDER: STUDY OF SIXTY CASES

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IN about one out of every hundred cholecystectomies for stones the surgeon faces carcinoma of the gall bladder. Nearly always a very discouraging problem confronts him.

The disease was described as early as 1777. It has been noted in one in every 250 routine post mortem examinations which represents about 3 per cent of all malignancies.[17] Compared with other parts of the body it is fifth or sixth in frequency.[13] In some studies a much higher incidence has been encountered. In most statistics it represents between 8 and 10 per cent of all carcinomas in women.

Inasmuch as we have had only six decades of modern gall-bladder surgery, it is possible that further diagnostic clues may be found in recently encountered cases. Further, it is well for us to refocus our attention on a subject which all too frequently is on the periphery of diagnostic vision in our almost daily contact with biliary disease.

I have reviewed the records and specimens of the past decade available to me. Only patients in whom the diagnosis was confirmed by biopsy or necropsy were chosen. Cases with fragmentary records were discarded. On this basis sixty cases from the past decade in Twin City institutions were studied.

From the Department of Surgery, University of Minnesota. Abstract of inaugural thesis presented before Minneapolis Surgical Society, January 8, 1942.

If any symptom pattern could be called characteristic, it is presented by a woman over fifty whose trouble began suddenly a few months before with a steady right upper quadrant pain at which time she also began to lose weight. She is apt to have had nausea and vomiting. She may or may not be jaundiced. She is not anemic. She probably has tenderness in the right upper quadrant and the chances are a mass is palpable there. The liver is enlarged. Cholecystographic studies show a nonfunctioning gall bladder.

Age and Sex.—Carcinoma of the gall bladder is a disease of the so-called cancer age. It is very rare before the age of fifty. The youngest patient in this series was thirty-one and the oldest eighty-five, with an average age of 65.4. The average age of males was sixty-eight and of females 63.3. Ninety-three per cent of the patients were over fifty. Cooper[2] reported the disease in a patient twenty-eight years of age which is the youngest in the recent literature. There were thirty-six females to twenty-four males, a *ratio* of 1.5 to 1. The usual ratio in the United States is three females to one male.

Symptoms.—Most of the patients gave a history which at least was suggestive of malignancy. The disease begins acutely in most cases. Pain is

the earliest and most characteristic symptom. It was present in 86 per cent in this series. In only 13 per cent was there a long preceding history of gall-bladder disease ranging from three and one-half to thirty-seven years. Half gave a history of three months or less at the time of examination and in 80 per cent symptoms had lasted a year or less. Twenty per cent gave a history of more than a year ranging up to thirty-seven years and in this group it was difficult to define where the signs of malignancy developed.

Thirty-three per cent of the patients in this series specifically stated that the pain was dull and constant, usually in the right upper quadrant or epigastrium. In five per cent the pain began as colic and ended in a steady pain. In about 40 per cent, therefore, the pain was constant or became so.

Weight loss was a striking feature encountered in this series. Some patients dated the weight loss from the onset of the illness. Illingworth of Scotland suggested in 1935 that "weight loss is not a common finding in carcinoma of the gall bladder." This is contrary to the experience in most series in the United States and in my series. Seventy per cent of the patients had lost weight. In no case was a notation of no weight loss made. In 20 per cent the amount was not specified. Losses ranged from 10 to 60 pounds with an average of 27.5 pounds. In 30 per cent the weight loss preceded or was concomitant with the onset of other symptoms. Nineteen of the twenty-nine patients who had lost specific amounts of weight also complained of anorexia, nausea, vomiting or all three. Loss of weight was present in every one of 48 cases reported from the Boston City hospital by Jankelson in 1937.[8]

Jaundice was present in 51.6 per cent of cases at the time of examination. It was usually of gradual onset and steadily increasing severity. Terminal icterus indices up to 135 and 178 were found frequently. In the severely jaundiced patients ductal obstruction was found. Liver metastases usually accounted for the milder types. In one case jaundice was due to torsion only of the common duct. Anorexia, nausea or vomiting or all three were found in 70 per cent. Bloating and belching were found in 45 per cent.

A mass was felt in the right upper quadrant in 48 per cent in this series. It usually was described as hard and nodular and moved with respiration. Sixty per cent of those with a mass complained of tenderness on palpation of that mass. This is contrary to some statements made in older literature. The liver was enlarged in 48 per cent.

Roentgen Diagnosis.—A nonfilling gall bladder with or without stone shadows is to be expected in carcinoma of the gall bladder. Cholecystograms were made in twenty-five of the sixty cases. All showed a nonfunctioning gall bladder. In twelve calculi were visible on x-ray.

Kirklin stated in 1932[9] that he was able to diagnose papilloma and adenoma in the gall bladder with considerable accuracy but had not yet made a diagnosis of carcinoma of the gall bladder. He reviewed the roentgenograms of sixteen proven cases of carcinoma. Fourteen gave no dye shadow. Half showed stones. One showed stones with good function and one had a normal cholecystogram. Spitzenberger[15] made a correct diagnosis in two cases on the basis of a fistulous connection between the gall bladder and neighboring viscera.

Stones were found in 70.1 per cent in this series. Recent studies show an incidence of 48 to 100 per cent. The hemoglobin was reported in forty-five cases. The average was 74 per cent. The cases with the lowest values, 26, 34, 45 and 46 showed evidence of hemorrhage into the gastro-intestinal tract.

Pathology.—Fifty-four were adenocarcinomas. Four squamous celled tumors were found. There were two colloid carcinomas.

Grossly scirrhous carcinoma was the most common type found. The gall bladder wall was hard and cartilaginous to palpation. A few cases had involvement of the whole gall-bladder wall and the lumen was obliterated. Microscopically the lesion was an adenocarcinoma with more or less fibrous stroma. Sometimes a tubular structure was maintained whereas in others cells were scattered about in a dense fibrous stroma.

Papillary carcinomas were less frequent. Microscopically the structure was that of a columnar celled adenocarcinoma. Colloid carcinomas filled the lumen of the gall bladder. The four cases of squamous celled carcinoma resembled the scirrhous in gross structure.

It has been written that carcinomas of the gall bladder originate chiefly in the fundus. It is extremely difficult to identify the source in such

TABLE I. INCIDENCE OF CANCER IN CASES OF CALCULOSIS OF THE GALL BLADDER

	Percentage
Erdmann	1.4
Kehr	3.0
Heller	3.34
Gessner	4.0
Rolleston	4.5
Moynihan	5.0
Lentze	5.1
Riedel	7.8
Fawcett and Rippmann	8.1
Graham	8.5

TABLE II. INCIDENCE OF CALCULOSIS IN CANCEROUS GALL BLADDER

	Percentage
Seide and Geller	48.5
Gray and Sharpe	50.0
Judd and Gray	64.6
Jankelson	68.9
Lichtenstein and Tannenbaum	69.3
Liebowitz	71.4
Shelley and Ross	73.7
Boyd	80.0
Teidemann	85.0
Lam	87.0
Warren and Balch	88.0
Judd and Baungartner	94.0
Abell	100.0
Boyce and McFetridge Average in 1,000 cases	73.4

an organ as the gall bladder. Very few are seen early. On the basis of surface area alone the fundus would be the more frequent site. Stewart, Lieber and Morgan[16] reviewed twenty-seven cases reported in the literature as being primary in the cystic duct and from the evidence were not certain any of them were primary in the cystic duct.

Because of the extensive lymphatic drainage of the gall bladder and proximity to other organs, metastases are frequent and early. Often the indurated area was in the gall bladder wall facing the liver and in such instances the carcinoma already had penetrated several centimeters into the liver. Metastases were noted in the liver in thirty-eight cases, porta hepatis in nineteen, peritoneum in eleven, cystic duct glands in eleven, retroperitoneal lymph nodes in six, omentum in six, lungs in four, duodenum in four, pancreas four, colon four, suprarenals three, mesenteric lymph nodes three, kidneys two, spleen two, stomach two, sternum one, mediastinum one. In one case a metastasis to the humerus was the first intimation of the disease. In one case the duodenum was involved directly causing obstruction.

There is difference of opinion regarding the direct etiologic relationship between calculi and carcinoma. The experimental evidence is not entirely convincing. Even though a direct relationship has not been proven, it is well established that the two conditions occur most frequently together and calculi at least are a warning sign. The early surgeons encountered carcinoma of the gall bladder more frequently in the days when calculi and inflammation were allowed to battle it out with the body for longer periods. W. J. Mayo[12] found carcinoma in five per cent of a series of 405 operations on the gall bladder in 1902.

Graham[4] has concluded that 4 to 5 per cent of women of cancer age who have gall stones will develop carcinoma of the gall bladder. The mortality rate for all types of risks at Barnes hospital for the three years ending 1930 was 1.5 per cent. Lahey,[10] Graham,[4] Boyce and McFetridge[1] and Lam,[11] among recent authors, advocate prophylactic cholecystectomy in women who have gall stones. Before any such policy is undertaken for the country at large one should be armed with mortality and morbidity figures, which are not available at present. If removal of all gall bladders with stones with or without colics should not be advocated for the country at large it is not a criticism of the principle as such.

There is then no diagnostic clinical picture for carcinoma of the gall bladder. The clinical picture will fit many cases of benign biliary disease or cancer in other organs. The following points can be stressed: (1) advanced age, (2) steady dull pain or a change from ordinary biliary symptoms to a more steady pain, (3) weight loss with onset soon after the constant pain, (4) absence of anemia and later presence of (5) a tumor mass in the right upper quadrant and probably jaundice.

It must be admitted that in the present state of our knowledge the outlook is gloomy for diagnosis early enough to salvage these patients. There is no instance of successful removal in this series. Gray[5] and Paine[14] have performed V excision of a portion of the liver in eliminating contiguous metastases. More general use of peritoneoscopy should eliminate some exploratory operations which only hasten the end of the patient.

More hope lies in revision of our attitude toward the patient with gallstones who is fifty or beyond and who has had one or two attacks of colic. A gall bladder with stones has a greater chance of developing carcinoma than one with-

out stones. Even though the danger of loss of life from carcinoma of the gall bladder were the same or less than the danger from operative procedure, there are other possible tragic developments than malignancy to consider. We should have more follow-up studies like that of Jaguttis,[7] who traced 114 cases of cholelithiasis treated conservatively for ten to twenty-five years. Five developed carcinoma of the gall bladder, thirteen died of cholecystic disease, twenty-five were operated on for complications, four of whom died. The above does not consider the human suffering which must have been involved.

Calculi are associated with either inflammation or carcinoma.

Innocent gallstones are a myth.

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THE USE AND ABUSE OF CHEMOTHERAPY

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THE sulfonamide compounds are effective in the treatment of many bacterial infections. While very satisfactory results have been obtained in the treatment of certain types of pneumonia, I should like to discuss briefly with you some of the uses and abuses of sulfonamide therapy in upper respiratory tract infections. The widespread use of the drugs for the mildest forms of respiratory diseases of doubtful etiology has been looked upon with considerable apprehension by many physicians. It is becoming apparent that following such a practice, more and more individuals are being rendered sensitive to the sulfonamide compounds, and the incidence of disastrous reactions may be expected to increase. The State of Minnesota is to be commended in the attempt to control the promiscuous use of these drugs. Sulfonamide compounds may not be dispensed without a prescription by a registered physician.

When one considers the incidence of the common cold, and the many forms of treatment and preparations that have been used in the therapy of this affliction, it was to be expected that the sulfonamide drugs would be given a trial. It is now generally agreed that the sulfonamides are not specific for the common cold. One of the principal difficulties is that the precise etiological agent has not been defined. Epidemics of the common cold are probably of virus origin. Nevertheless, it is a prevalent practice to prescribe a sulfonamide drug for the treatment of this disease. Usually small doses of the selected drug are given over a period of two to three days, and sometimes for a longer period. In defense of such a procedure, it is argued that since the common cold may be succeeded by secondary bacterial infections such as pneumonia, the sulfonamides act as prophylactic agents. With rare exceptions, I do not subscribe to such a routine practice. In the first place, such a procedure gives the individual a false sense of physical security. Too often, instead of going to bed for a day or two the patient keeps on with the daily routine having the feeling that he is being protected against any serious consequences. In the

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second place, the great majority of common colds constitute only a minor illness, but the person who has received a sulfonamide may ascribe the termination of his illness to chemotherapy. Many such individuals have a succession of colds, and each time they are tempted to utilize their sulfonamide tablets. Frequently one learns the original medication was initiated by a physician, but when the patient or other members of the family were subsequently the victims of acute coryza, the remaining supply of tablets in the medicine cabinet was utilized without the advice of a physician. Or lacking the drug, the patient has prevailed upon the good nature of his doctor to refill the prescription. The intermittent use of small doses of a sulfonamide will lead to drug hypersensitivity in not a few individuals. I need not dwell upon the disastrous consequences that may be encountered in an individual sensitized to one or all of the sulfonamides. Our policy in the treatment of the common cold is to follow the orthodox procedure; that is, to advise the patient to go to bed, and to treat him symptomatically. If and when a more serious bacterial infection should ensue, then the appropriate sulfonamide is prescribed in full therapeutic doses.

We do use the sulfonamides for prophylactic purposes in selected groups of individuals having an acute coryza. It is now generally agreed that only a rare patient with bacterial endocarditis will respond satisfactorily to sulfonamide therapy. Since the first manifestations of this highly fatal disease, not infrequently, are preceded by an upper respiratory infection, we have recommended that any individual having a congenital or acquired endocardial lesion should go to bed at the onset of a respiratory infection, and take 0.5 gram of sulfathiazole three to four times a day for two to four days. We also have prescribed similar doses of sulfathiazole or sulfadiazine for obstetrical patients who have an acute respiratory infection at or near term.

The sulfonamides have also been used extensively in the treatment of acute pharyngitis, or "sore throat." Here again, the mild character of the illness in many cases does not warrant the routine use of the drugs. Some patients with a pharyngitis of hemolytic streptococcal origin may be acutely ill. In these cases we feel justified in using sulfadiazine in full therapeutic doses; that is, 1 grain per pound of body weight per twenty-four hours in small children, and for adults, an initial dose of 3 to 4 grams and then 1 gram every four to six hours. The vast majority of cases of acute tonsillitis are caused by hemolytic streptococci. During the past year, sulfadiazine has been used in the treatment of these patients with satisfactory results. The therapeutic response has been by no means dramatic, but many of the patients feel and look better coincident with the use of sulfadiazine.

Acute tracheo-bronchitis may be due to different biological agents. I have been reluctant to use the sulfonamide compounds for this condition, but some of my associates have insisted upon a trial of sulfadiazine not only in their patients, but when they themselves were the patients. Coincident with the administration of sulfadiazine, improvement in the condition of the patient has frequently been apparent. The doses used were approximately those prescribed for patients with pneumonia. We have not been favorably impressed by the results of chemotherapy in patients having chronic bronchitis.

Influenza is a loosely used term. Epidemic influenza is due to a specific virus, and chemotherapy is without effect in experimentally induced infections in the lower animals. Likewise, sulfonamide therapy is not effective in proved human cases of epidemic influenza. As Finland and his associates have pointed out, sulfathiazole and sulfadiazine have been of considerable value in secondary pulmonary infections due to the staphylococcus in patients from whom the influenza virus was also isolated. It is not at all unlikely that sulfonamide therapy may be beneficial for prophylactic purposes when epidemic influenza occurs in a community in association with a high incidence of pulmonary complications.

During the past few years physicians in various parts of the country have encountered many cases of atypical pneumonia of doubtful etiology, and often called virus pneumonia. Many physicians in Minnesota have encountered such cases. The general impression is that the sulfonamides are not very effective therapeutically or prophylactically. However, it is my policy to administer a sulfonamide, usually sulfadiazine, to every patient having evidence of pneumonia. Full therapeutic doses are given for at least forty-eight hours. If at the end of this time, the biological cause of the infection has not been defined, and the patient shows no improvement, chemotherapy is discontinued. In a few instances, where we

have not been able to make a bacteriological diagnosis, the patients have responded quite well following sulfonamide therapy. It is possible that these cases represented pneumococcal infections, although we were unable to isolate pneumococci.

In conclusion, I would like to emphasize that the availability of the sulfonamides has marked a tremendous advancement in our therapy of pneumonia and its complications. The promiscuous use of these drugs for mild respiratory infections of doubtful etiology has afforded questionable therapeutic results, and has provoked many instances of hypersensitivity to the compounds. The medical profession must assume a more critical and conservative attitude for the present in this type of therapy. This must be done in order to correct the present attitude of many lay people who have been led to believe that sulfonamide therapy is an established and harmless procedure in the management of respiratory infections.

THE USE AND ABUSE OF DIGITALIS
(Abstract)

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IN spite of all the advances made recently in drug therapy, digitalis remains unrivalled in the treatment of heart disease. Strophanthus and squill belong to the same group but these are not as effective. Strophanthus is used very little in this country though quite extensively in France.

The active principal of digitalis is a glucoside which is a combination of a sugar with the digitoxigenin and as such penetrates the cells more readily to become fixed to the muscles.

For a long time it was thought by many that digitalis was effective only when auricular fibrillation is present and that its effectiveness was due mainly to the slowing of the heart. They overlooked or minimized the primary action of the drug. This primary effect is directly on the myocardium where it increases the force of the systolic contraction and thus helps to empty the ventricles more completely in a failing heart. In addition to increasing the force of the systole the *time* of systole is shortened which allows more time for the diastolic filling of the ventricles and for the recovery of the heart muscles. As Dr. Visscher has so well established through his careful researches, digitalis increases the mechanical efficiency of the heart muscles. The drug may cause marked improvement in heart failure even without cardiac slowing. Cardiac slowing is brought about directly, indirectly and reflexly. Indirectly the excessive irritability of the myocardium is reduced through an increase of the coronary blood flow. When the heart is properly digitalized the cardiac output is increased, the velocity of the blood flow is more rapid, the blood volume is lessened and the heart muscle tone is improved. This is accompanied by an increase in the circulation velocity and usually a decrease in the venous pressure as a result of the improved cardiac output. The blood pressure itself is not directly affected. In congestive heart failure with edema the urinary output is often greatly increased because of the improvement in circulation. Digitalis has no direct diuretic effect on the kidneys. The electrocardiogram may be affected by digitalis in a prolonged PR interval, a shortened QT and depressed ST and T segments. The toxic effect of the drug from overdosage manifests itself through anorexia, nausea, vomiting, diarrhea, abdominal discomfort and visual disturbances. There may be also fatigue, malaise, headache and delirium. It must be remembered that as much as 90 per cent of the drug is usually fixed in the extracardial tissues. The drug is slowly eliminated or destroyed and therefore cumulative toxic effects must be guarded against. It is important to know the optimum dosage of digitalis for each specific case.

Doses of five and ten drops of the tincture of digitalis three times a day in an untreated case are quite worthless since such small doses are insufficient to digitalize the heart or even to be used as maintenance doses. Large doses should be

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given at first to "saturate" the heart muscle with the drug. In severe cases of decompensation as much as eight cat units may be given in a single dose followed by four cat units in four or six hours and then two cat units repeated every four to six hours until evidence of a proper therapeutic effect has been obtained. From then on from one to two cat unit doses should be given as a maintenance dose under careful observation at first. The slowing of the pulse especially in a case of fibrillation is one of the guides for optimum dosage. From fifteen to twenty-two cat units may have to be given in twenty-four to forty-eight hours in order to obtain digitalization. Toxic symptoms must be avoided. The powdered leaf in either tablet or capsule form is becoming more popular than the tincture. Digitalis should be given orally whenever possible. In cases of nausea and vomiting the tincture can be given in a small quantity of water by rectum as a retention enema. In emergency cases the more purified forms may be given intravenously. This requires special care.

A word should be said as to the indications for digitalis therapy. From a proper knowledge of the physiological effects of digitalis on the heart one is soon convinced that the only real indication for this drug is congestive heart failure. Congestive heart failure from any cause requires the use of digitalis. The etiology of the failure is quite unimportant except that in toxic and degenerative heart lesions the dosage is usually smaller and the drug is administered with greater caution. The principal conditions in this group which may result in heart failure and in which the heart is more sensitive and therefore more susceptible to early toxic effects are coronary thrombosis, the toxic myocardium of acute infections and heart failure associated with hyperthyroidism. With these precautions in mind one can confidently treat heart disease with digitalis and be justified in expecting satisfactory results.

"BUSINESS AS USUAL" OUT

"Business as usual" is out for the private physician and the health officer just as it is for the huge industrial concern, the small manufacturer, the butcher and the baker, Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, declared at the meeting of the Southern Medical Association.

Even if available medical services are rationed under National Service Legislation, as has been proposed and discussed in recent weeks, great efforts must be made, he warned, to increase the supply of personnel. This means keeping enough physicians in medical schools to teach and train more doctors. Medical students and, if the draft age is lowered, premedical students could, he suggested, be enrolled as a special category of professional manpower and, upon completion of internship, allocated among the Army, Navy and civilian services.

"This," he said, "would eliminate the present uneconomical procedure under which the Army and the Navy compete for medical students by commissioning them in numbers which may later prove disproportionate to the needs of the respective services.

"Much depends now and more will depend after the war upon a continuing flow of young, able-bodied physicians of the highest caliber."

The Medical and Health Committee, he reported, has recently approved a plan for increasing the number of graduate nurses and meeting the growing deficiency in hospital nursing services. The plan calls for speeding up the basic training course for completion in 24 months, after which third year students would go on the payroll of the parent hospital or affiliated institutions. They would live outside the hospital, thus leaving dormitory and classroom space for more students. They would not receive their certificates until after three years of training, but their release in the last year would supply civilian hospitals with replacements for the general duty nurses who have been drawn into war service. The physical facilities for nurse training would be increased by one-third and hospitals would be provided with an augmented staff for war duty.

The tough job of supplying medical services in critical areas now lacking them, Dr. Parran said, can best be handled after the manner of handling other tough problems, by breaking it up into a lot of little ones and handling them one by one. Following this thought, plans for meeting needs in different communities will be worked out individually. Such plans are now being made by the Procurement and Assignment Service and the Public Health Service.

Health departments must be protected from too great draft of their manpower. Taking one public health physician from his job, he warned, may mean that three private practitioners will be needed to cure the unprevented sickness. Health departments, however, must cut out all frills, unnecessary inspections, complicated record keeping and long-range programs of doubtful value.—*Science News Letter,* November 21, 1942.

CLINICAL-PATHOLOGICAL CONFERENCE

MINNEAPOLIS GENERAL HOSPITAL

A. J. Hertzog, M.D., and S. V. Lofsness, M.D.
Pathologists

Presentation of a Case

DR. BLACKMORE: This patient is a sixty-year-old white male who entered the hospital because of a painful ulcer on the left great toe and swelling of his lower extremities. He was apparently well until eight months prior to admission when he noticed a cyanotic swelling of both hands and pain along the lateral posterior portion of his left thigh. This disappeared and did not recur. About three weeks prior to admission, swelling of his legs began and he developed an ulcer on the left great toe. On questioning, he stated that he had swelling of the lymph nodes of the neck and axilla for the past fifteen years. These had never caused him any discomfort. He had no other complaints, and his family history was noncontributory. He spoke English poorly and a history was obtained with difficulty.

On physical examination his temperature and pulse rate were normal; his blood pressure was 165/80. His hands were swollen and showed a scaly dermatitis. His legs were also swollen and showed a scaly inflammation of the skin. There was an ulcer on the left great toe and bilateral hallux valgus. The chest was clear and resonant, and the heart showed no abnormalities. The liver and spleen were not palpable. There was bilateral enlargement of the cervical, axillary and inguinal lymph nodes; they were discrete and varied from the size of a pea to that of a walnut. There was a small mass in the left lower quadrant of his abdomen that was felt on deep palpation and thought to be enlarged lymph nodes. The remaining examination showed nothing of note. A urinalysis was essentially negative. His hemoglobin was 86 per cent, red blood count was 4,500,000, and a total leukocyte count was 24,850. The differential leukocyte count showed 76 per cent lymphocytes, 17 per cent neutrophiles, 5 per cent monocytes, and 2 per cent eosinophiles.

DR. HERTZOG: Did a morphological study of the blood smear reveal any immaturity in the lymphocytes?

DR. BLACKMORE: The majority of the lymphocytes were of the small mature variety, and no immaturity in any of the leukocytes was found.

DR. PETIT: Could this be a leukemoid reaction?

DR. SCHLEICHER: Leukemoid reactions generally affect the myeloid cells rather than the lymphocytes, and in this particular case, such a reaction is not strongly considered.

DR. HERTZOG: In a leukemoid reaction, there should be some immaturity in the white blood cells.

DR. GRATZEK: The radiographs of his chest do not reveal any definite abnormalities. There is a suggestion of cardiac enlargement of the left ventricular type. There is shortening of the thoracic cage and some collapse of the vertebral bodies. Radiographs of his hands and feet show a marginal sclerosis that is associated with chronic arthritis. There is a marked hallux valgus of both feet. I do not see anything particularly abnormal in these films.

DR. HERTZOG: Was there any explanation for the skin eruption and edema of his extremities?

DR. BLACKMORE: The skin eruption was considered by the dermatologists to be a nonspecific variety of chronic dermatitis, and in his lower extremities probably related to variocosities. The edema was thought to be on an inflammatory basis secondary to the dermatitis.

DR. HERTZOG: One would naturally think of chronic lymphatic leukemia with the generalized lymphadenopathy, 24,500 leukocyte count and 76 per cent lymphocytes. However, the blood smear in itself is not diagnostic of leukemia because of the lack of immaturity in the lymphocytes. One can only say that the blood picture is compatible with, and suggestive of, chronic lymphatic leukemia. The term aleukemic leukemia is used to describe those cases of leukemia where no immaturity can be demonstrated in the peripheral blood. The total leukocyte count is often normal or below the normal range. It is in these cases that we have to rely upon bone marrow studies and lymph node biopsies to establish the diagnosis.

DR. BLACKMORE: An aspiration of the sternal bone marrow and a biopsy of an axillary lymph node were done. Dr. Schleicher will give us the result of his bone marrow study.

DR. SCHLEICHER: There was the possibility that the blood picture and chronic lymphadenopathy in this case were the result of the skin lesions. It must be kept in mind that frequently it is not possible to give an interpretation of the blood picture until it is correlated with the clinical findings and bone marrow pattern. Hence a bone marrow aspiration was done to determine whether the marrow was involved in a leukemic condition. A biopsy of a lymphnode was done, as a double check is often desirable since one or the other or both methods may establish the diagnosis. In this case, on aspirating the sternal marrow, numerous small particles of tissue ranging from less than a pin head in size to 2 mm. in diameter were found. This is quite an unusual finding. I will pass around a test tube with these minute tumor masses suspended in a fixative. Besides the usual smears made from the aspirated marrow, the small tumor nodules were placed in Helly's fixative and paraffin sections were made just as with any other tissue. I will now demonstrate one of these slides with the lantern. The tumor masses are composed of reticulolymphocytes, medium and small forms. The latter are morphologically identical with those observed in the peripheral blood. The pattern of the tumors suggests local production of lymphocytes. Mitosis is infrequent. They have not as yet replaced large amounts of myeloid and erythroid tissue since large patches of normal marrow are seen between the nod-

ules. It appears that the process destroys bone trabeculæ and compresses or injures hematogenic tissue. When large, the process may be seen by x-ray as rarefactions. In view of the long history given by the patient, I would venture to say that the process is slowly growing. This is a variety of lymphatic leukemia first described by Zanaty in 1934 as "leukemic lymphoma of the bone marrow." Storti, in 1937, pointed out that in these cases a lymphadenopathy, splenomegaly or hepatomegaly may or may not be present. The lesion may be restricted to the bone marrow with other organs only slightly or not involved. You are aware of the fact there are differences of opinion whether leukemia is a neoplastic process or a benign hyperplasia. I favor the former concept.

DR. LOFSNESS: Why is this type of leukemia so rarely observed and how large may these tumor masses reach?

DR. SCHLEICHER: The reason is the tendency of many pathologists to omit an examination of the bone marrow in frank cases of leukemia. The nodules may vary from a size of a pin-point to that of a pea. The latter type generally produces demonstrable changes in the skeletal system. In this case, the nodules were too small to produce any changes in the bones as seen by x-ray.

DR. HERTZOG: Did you make any smears or imprints from the bone marrow besides the sections of the small nodules?

DR. SCHLEICHER: Yes, imprints and spread preparations were made. They showed a small number of reticulum cells differentiating toward lymphocytes. These immature lymphocytes are reticulolymphocytes. Medium sized lymphocytes were present in a moderate number. The small mature lymphocytes constituted the predominant elements. Occasionally a mitotic figure was observed.

DR. LOFSNESS: I will show with the projector the first slide made from the biopsied axillary lymphnode. It shows only partial obliteration of its normal architecture; many of the sinuses are intact. In other parts of the node, there is a uniform proliferation of small lymphocytes replacing the normal pattern. If the whole node looked like this, one would say that it was leukemia. However, as the node is only partially involved, we can say only that it is probably leukemia.

STUDENT: What else could it be then?

DR. LOFSNESS: One has to consider nonspecific hyperplasia or, if you want to use the term, lymphadenitis. However, we made more sections from this node nearer the center. These latter sections show complete obliteration of the normal structure by a marked proliferation of small discrete round cells. This section is diagnostic of leukemia.

DR. SCHLEICHER: This brings out the necessity to cut lymphnodes through the middle and make at least one section from each half of the node. The findings in the lymphnode agree well with those in the bone marrow.

INTERN: Is there immaturity of the lymphocytes in the lymphnode?

DR. HERTZOG: It is very difficult for the pathologist to recognize immaturity of lymphocytes in sections of fixed tissue with hematoxylin and eosin stains. The diagnosis of leukemia in this lymphnode is based more on histologic criteria than on cytologic changes. When we wish to study the cytology of cells from lymphnodes, it is best to make imprints from the fresh node before fixation, and stain them with May-Grunwald-Giemsa or Wright's stain, just as we would blood cells. Much of the argument in the past among hematologists has been due to attempts to classify cells from slides prepared from fixed tissue. In bone marrow studies, it is ideal to combine the two methods. We can use the dry imprint or smear method for cytological study and the fixed paraffin section for a study of the architectural pattern. We can ask Dr. Gratzek what he thinks about x-ray therapy in these chronic cases of lymphatic leukemia. I think we all agree that x-ray therapy is contraindicated in the acute cases.

DR. GRATZEK: Absolutely. In the chronic cases, one can reduce the size of the lymphnodes and symptomatically they seem to improve for a while, but you get a recurrence just as you do in Hodgkin's disease.

DR. PEPPARD: I would like to ask Dr. Schleicher to express an opinion concerning the idea of leukemia, in general, being a neoplastic disease.

DR. SCHLEICHER: I am not sure that I have the qualifications to express an opinion. I wish to say that I am in sympathy with the group that regards leukemia as a neoplasm. For a long time, Dr. Ewing has maintained that the lesion eventually undermines the health of the patient and interferes with the function of vital organs as any other neoplasm. Leukemia follows a pattern characteristic of neoplasms and this feature cannot be overlooked. There may be a benign stage which gradually shades into neoplasm, but the transition may occur over a period of many years. That leukemia may be precipitated by infections or other illnesses does not disprove that leukemia is a neoplasm. The patient eventually dies from the disease or its complications, regardless of the type of leukemia or state of differentiation. What do you think, Dr. Hertzog?

DR. HERTZOG: The question is still unsettled, but most of us believe that leukemia is a type of malignant lymphoblastoma. Some investigators readily admit that mouse leukemia is a neoplasm, but are not convinced that mouse leukemia and the human form are the same disease. I heard a paper a few years ago in which the author attempted to show that acute lymphatic leukemia was a neoplastic disease while chronic lymphatic leukemia was a separate non-neoplastic disease. I do not think many agree with him as his evidence was based largely on vital staining technique. In this part of the country, we do not consider this a reliable method.

DR. PEPPARD: I am in no position to hold an opinion or belief in anything other than what I have learned in discussions similar to this. I think I have turned more particularly towards the idea of a neoplasm.

DR. HERTZOG: If there is no further discussion, we will conclude the meeting. The diagnosis in this case is chronic lymphatic leukemia. Dr. Schleicher tells us that we are dealing with an unusual variety because of the small tumor nodules found in the bone marrow, and that it can be properly called leukemic lymphoma.

THE ASIATIC CHOLERA IN SAINT PAUL

JOHN M. ARMSTRONG, M.D.
Saint Paul, Minnesota

PROBABLY few of our residents or of our local physicians know that the Asiatic cholera ever occurred in Saint Paul, or perhaps even in the United States. Since we are dealing with Saint Paul in this sketch, it is not necessary to go into the history of cholera in India. One may state, however, that it was not until the year 1831 that the disease reached Europe by way of the Caravan Route through Persia to Russia; from there it spread to Western Europe.

To understand how and why the disease came to Minnesota it may be well to outline its progress from Europe to North America. In June, 1832, the disease reached Canada with emigrants from Ireland, and from thence by way of Detroit to the United States. About the same time also it was brought to New York and in October entered the country through New Orleans. From these centers it spread westward to the Ohio Valley from the East, along the Great Lakes from Detroit to Chicago, and northward up the Mississippi Valley, and by 1833 reached as far as the Pacific Coast. In 1833, however, the eastern seaboard was almost free from the disease. The cholera again was imported to New York in 1834, and to New Orleans from Cuba in 1835 and was spread in the West until the winter of 1837-1838. For the next ten years the United States was practically free from it. In 1848 another visitation took place. The disease broke out almost simultaneously in New York and New Orleans and in 1849 overran the entire country East of the Rocky Mountains, and again the same year gained admission through Canada. By 1850, it was widespread throughout the entire Mississippi Valley, and the same year appeared in San Francisco, being introduced via Panama. In 1851 the epidemic began to abate, but in 1854 the disease again was imported from Europe and the West Indies and prevailed generally throughout North America and particularly in the basins of the Mississippi and Ohio Rivers. After 1855 only scattered cases occurred until 1866, when it again was introduced at Halifax, New York, and at New Orleans. In 1873 cholera again was imported and for the last time assumed epidemic proportions in North America.[1]

In summary, these five epidemics of the disease have occurred in the United States. That of 1832-1837 did not affect us because there were no settlers in Saint Paul until 1838, and but seven families settled there that year. There is, then, no record of any cholera in Saint Paul during the first epidemic because there are no records of anything. It is true that Fort Snelling, or Fort St. Anthony as it was first called, had been established in 1819, but the records of that post from its establishment to the year 1861 are lost. The reports of the Surgeon General of the Army exist, however, and record but a single case of cholera at Fort Snelling in 1854, a recruit who was ill when he arrived.

In the year 1849, Minnesota Territory was established, Saint Paul was in-

corporated as a town, Ramsey County was organized, a newspaper started and local records began. Williams, in his History of Saint Paul and Ramsey County (1876), stated: "One or two cases of cholera occurred this season (1849), on May 3, L. B. Larpenteur, father of E. N. and grandfather of A. L. Larpenteur, arrived in Saint Paul and on the seventh died of cholera, aged seventy-one years. He had unfortunately contracted the disease on his journey up the river." In a discussion of this paragraph about twenty years ago, Mr. A. L. Larpenteur stated that his grandfather had left Baltimore and had come to Saint Paul by boat down the Ohio, and up the Mississippi River. He also stated that a man named Lumley, in his employ, had died of the disease some weeks later and that there were other deaths from the disease. This statement is confirmed by the United States Census taken in the autumn of 1850 as follows:

District in the County of Ramsey, Minnesota Territory

1850 Census

Deaths Year Ending June 1, 1850

Name	*Age*	*Place of Birth*	*Days Ill*	*Cause of Death*
Pierre Gervais	8	Minn. Terr.	42	Unknown
Magdelin Donna	60	Canada	15	Fever
Antoine Bourais	80	Canada	30	Pulmonary
Zoe Bivot	25	Canada	2	Cholera
John Baptiste	2	Canada	30	Pulmonary
Sophie Poncin	7	Minn. Terr.	3	Cholera
Alex. Ramsey, Jr.	4	Pennsylvania	14	Fever
W. A. Forbes	6/12	Minn. Terr.	21	Inflam. Brain
Phoebe Glass	8	Wisconsin	2	Burned
Mary Jane Barber	5	Iowa	3	Congestive
Albert Barber	2	Iowa	3	Congestive
John Lermley	23	Ohio	5	Cholera
James Green	40	Pennsylvania	1	Cholera
Elijah Gladden	35	Ohio	5	Cholera
Francis Robert	25	Missouri	90	Consumption
James Goodhue, Jr.	2	Wisconsin	20	Teething

Note that the population of Ramsey County was 2,197, but the county at that time embraced practically all of the present Ramsey, Anoka, Mille Lacs, Isanti and Kanabec counties. The population of Saint Paul was recorded as 1,294; almost half of these had arrived during the year. This census is the first mortality record for Minnesota. Since the record begins with June, 1849, Mr. Larpenteur's name is not included and as the record ends in June, 1850, no doubt other cholera deaths occurred later in the summer of the latter year. No attempts were made to collect mortality statistics in Minnesota until 1866 when the Board of Health in Saint Paul required birth and death certificates to be filed, although some deaths and births were recorded with the clerk of the District Court beginning about 1860. In making this statement I include church records, but these have never been collected and do not, as far as I know, give the cause of death except in rare instances. A United States census was made in 1857 and again in 1860. That of 1857 contains no mortality statistics while that of 1860 contains a list of deaths with the causes of death for the year ending June 1, 1860. No cholera deaths are recorded for Saint Paul.

To go back to John Lumley, whose name as well as that of Barbour is misspelled in the report. It seems that he was an Odd Fellow and had been initiated into the lodge only four days before his death. The Fraternity turned out at his funeral, the first they had been called on to conduct. Referring to their new white regalia, James M. Goodhue, the editor of *The Pioneer*, wrote that

he "had not seen such a display of clean linen since the Territory was formed."

It was claimed, of course, that all the cholera came from below and that no cases originated in Saint Paul. Although this was good publicity and in the main correct, it was not entirely true.

Corresponding to the general course of the disease in the United States, there probably was but little cholera in Saint Paul between the years of 1850 and 1854. In so stating, however, one must say that records of events during these years are much fewer than at later dates. Governor Ramsey, in his diary under the date of June 11, 1861, noted that a steamboat arrived in Saint Paul the day before with "a few cases of cholera aboard" and on May 23, 1852, stated: "A young woman by the name of Dibble died at noon after an illness of two days, supposed to be cholera, giving great uneasiness to our people," and again on May 31, 1852, "Several very sudden deaths in town within the last few days, generally believed to be Asiatic cholera." No doubt the following paragraph by D. A. Robertson in the *Minnesota Democrat* for June 26, 1852, referred to these or still later cases: "If you are anxious to commit suicide drink plentifully of swamp water. We know of several cases of sudden death that might have been traced directly to the use of that beverage."

Early in May, 1854, the citizens of Saint Paul began to be worried because of the increased development of cholera along the river. It being reported prevalent at Keokuk and Galena, on May 25 "at a special meeting of the Common Council called to take into consideration the sanitary condition of the city [which became a city in 1854] and for the appointment of a Board of Health," an ordinance was formed establishing a Board of Health consisting of one citizen from each ward and the city physician. There having been no city physician, the Council appointed Dr. James Dinsmore Goodrich to fill that position, and the members of the Board were John P. Owens, first ward; Lott Moffett, second ward; and George W. Farrington, third ward. Previous to this time there had been a Committee of Health of the Common Council, and it was on the recommendation of this committee on May 23 that the above special meeting was called. From all accounts I have been able to collect, this was a hard worked Board and none of them shirked his duty. Immigrants were now pouring into Saint Paul and the city, being the head of navigation, was the dispersal point for them. Each steamboat brought in a hundred or more Irish and German emigrants packed on the lower deck. Previous to this time the inhabitants of Saint Paul had been mostly French-Canadians and Americans. It is needless, perhaps, to state here that the only approach to Saint Paul was by river. The railroad reached Galena in 1854, but did not reach Saint Paul until a decade later. In the winter, therefore, the city was more or less isolated, although a stage line (Burbank's Express) ran to Prairie du Chien or to La Crosse in the winter. Accommodations by stage were limited and the journey was uncomfortable and expensive.

How the cholera was disseminated by the boats is easily understood. There was no law limiting the number of passengers or enforcing examination of immigrants. The immigrants were packed aboard on the lower deck like sardines in a box. One must not get the idea that the river itself was contaminated, as the mode of transmission was more direct. All water used on board was taken from the river and poured into barrels on the lower deck from which the crew and passengers helped themselves, dipping it out with any utensil they had at hand.

(To be continued in January issue.)

President's Letter

I

WE HEAR much of the four freedoms: freedom of speech and of worship; freedom from fear and from want; and the fifth is economic freedom. Medicine also has its freedoms which must be saved from dictatorial regulation. There is the freedom to learn without being told just what we should learn, the freedom to improve, the freedom of investigation and research, the freedom to treat patients as we think they can best be treated, the freedom to gain rewards commensurate with ability as well as the freedom to treat patients without charge for the good of our souls and, finally, the freedom to improve the public health by every sane, scientific method. All of these freedoms, as well as the freedoms of the patient, will slip away unless we are eternally vigilant. Medical organizations are primarily scientific and educational. Fortunately, however, there are friends of medicine and friends of science among the laity. The work of the National Physicians Committee in informing the laity and legislators of the accomplishments of medicine, and of the constant fight of medical organization for the public welfare, has brought to light many friends of medicine. This organization has been very active during recent months in contacting the members of the national Congress. It is discovering the friends of medicine who will be of practical assistance in maintaining the freedoms of physician and patient. The results indicate that more than 300 congressmen out of 435 believe they should work for the preservation of the professional (vs. the trade) status of physicians, should oppose compulsory health insurance and should favor maintaining the personal doctor-patient relationship. On this basis we can assume that they also recognize the importance of maintaining other features of the democratic way of life for physicians and patients. Our friends doubtless will not only help us in legislative matters but they will also assist in bringing about modifications in the edicts of some of those who seem to "know all the answers." Let us keep before us the importance of the freedoms of medicine and show our gratitude in every way to those who are the friends of medicine; and let us use our influences individually to discover more friends of medicine.

II

On rereading my letters of the year, I am especially impressed with the fact that the problems discussed in them have been considered so thoroughly and solved so well by the Council, by our administrative staff, and by our various committees in coöperation with existing agencies. Industrial health, medical training for civilian defense, vaccination and immunization, the control of cancer and tuberculosis, sickness insurance, procurement and assignment of physicians, and medical education during wartime are some fields in which there has been great activity. The committees on medical testimony, on tuberculosis, and on public policy attained national recognition. Others can do likewise. The work of the Committee on Industrial Health will be most important during wartime. Specific accomplishment can be attained best through the studies of committees and their recommendations to the Council. In fact, an organization may thrive or die at the hands of its committees.

The Council has been especially alert and active under the leadership of Dr. W. L. Burnap. There seems to be general agreement that our annual meeting was all that could have been desired from an educational and scientific standpoint, and especial thanks are due the various committees of Duluth which made it a success. I am happy to have had the good fortune to be your president during such a successful year. My valedictory was expressed in the annual address; there remains nothing but to retire gratefully with all good wishes to my successor and with the hope that I shall be able to be of some service to the Association in the future.

H. Z. Giffin

President, Minnesota State Medical Association

EDITORIAL

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BUSINESS MANAGER
J. R. BRUCE

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INDUSTRIAL HEALTH

PRIOR to the turn of the century the health of the industrial worker received little or no consideration on the part of the employer. Long hours, unsanitary working conditions, the employment of children, all indicated a callous conscience on the part of the employer and society in general.

Much progress has been made within the memory of many of us in improving the status of the worker. There is no question but what the labor union has been largely responsible for correcting the evil of long hours and low pay which in previous generations constituted a national disgrace. Legal enactment, the result of an aroused public conscience, also did much to better the status of working men and women. The Workmen's Compensation Law is an example. The Social Security Act, which provides for unemployment and old age, enforces provision for needs that are almost surely bound to arise.

In recent years there has been a rapidly growing interest in Industrial Health. Much has already been accomplished in the prevention of industrial accidents. Much has still to be accomplished in the prevention not only of accidents but of illness amongst the workers. The services of physicians have been more and more sought by industry for the purpose of reducing accidents and sickness in the interest of greater efficiency. This has applied mainly to large industrial plants, while the smaller concerns for financial reasons have dispensed with medical services.

The medical profession has shown an increasing interest in Industrial Health. In 1939 a Council on Industrial Health was established by the American Medical Association, and a number of state medical associations, including Minnesota, have established Committees on Industrial Health and Occupational Diseases. For over a year our state committee has been publishing in the journal each month a page on various subjects related to Industrial Health.

In this number of MINNESOTA MEDICINE the subject of Industrial Health is being featured. The six addresses on the subject which were presented at the last meeting of the State Medical Association appear in this issue.

With the speed-up of industry incident to the war, the importance of reducing the loss of man-hours due to accident and sickness becomes of vital importance. It is said that this loss in war production amounts to 6,000,000 work days each month.

Plans for cutting down this enormous loss in the war effort require not only the services of medical men but the coöperation of engineers, sanitary experts, health and police departments. Activities include the prevention of accidents within and around industrial plants, supervision of health conditions in the homes of the workers as well as the medical care of those suffering from accidents and sickness. The employment of untrained workers and the mushroom growth of new communities provide additional problems for preventive medicine, public health and social hygiene.

One attempting to interest himself in the subject of Industrial Health is likely to be left in

a daze because of the many ramifications of the subject. State and county medical societies should, however, interest themselves to the extent at least of instituting Committees on Industrial Health which should be composed of representatives from private practice, industrial practice, the local health department and the local medical society.

In order that steps may be taken to correct unhealthful conditions in industrial plants, health officers must know what conditions need correction. Practitioners must be relied upon to report occupational diseases encountered in their practices. Many months ago forms were sent physicians for the reporting of occupational diseases. The response has been disappointing. It is possible that physicians hesitate to report information of this sort on the grounds that this would constitute a betrayal of confidence. This information is to be used, however, only for statistical purposes and scientific study. No information so obtained may be used under the law in any court. Physicians are urged to comply with the law and report all occupational diseases promptly to the Division of Industrial Health, State Department of Health, University Campus, Minneapolis.

THE PHYSICIAN AND INDUSTRIAL HEALTH

THE problems of industrial hygiene may be attacked from two angles: (1) the hygiene of the individual, and (2) the hygiene of the environment in which he works and lives. The first problem is a proper function of the medical sciences, while the working environment has to do largely with engineering practices. It is the province of the medical profession to diagnose diseases and primarily to recognize the existence of such diseases as may be due to the working environment. Based on the conclusions of the physician, the engineer learns what unhealthful conditions should be investigated and what control measures are to be initiated. It is essential, therefore, that the various professions understand clearly the functions of each and approach the solution of the problems of industrial hygiene as a joint effort and coöperate with one another to the fullest extent.

The medical problem may best be approached by grouping physicians in industry into full-time industrial physicians and part-time and on-call physicians. Approximately 85 per cent of workers are employed in small plants in which there are no organized medical services. Services to these industries are supplied by private practitioners including specialists in various fields, some of whom have made important contributions to industrial medicine. The medical departments of large industrial plants serve as models of efficiency and have demonstrated their work. The problem confronted by these departments in large industries in the present emergency is largely one of expansion of existing facilities. The fact that medical service to 85 per cent of our workers is predominantly in the hands of private physicians presents an important problem of coördination of effort. In large industries the relatively few full-time men who are specialists in industrial medicine have engaged chiefly in measures for the prevention of occupational disease and the promotion of health. Opportunities of a like nature and probably on a larger scale exist in small manufacturing establishments and are available to physicians who render services to these plants. These practitioners have, in the past, limited their industrial activities largely to the treatment of occupational injuries and diseases and have failed to a considerable degree to see the opportunities afforded by industrial hygiene.

Since its organization in 1939 the Council on Industrial Health of the American Medical Association has been active in stimulating the contributions which the physician, individually and through medical organizations, can make to the industrial workers. It has also stimulated the formation of committees on industrial hygiene in state and county medical organizations and has clearly outlined a program which can be adopted by the state and local societies. Among the objectives of this program are: (1) the training of physicians to recognize and report occupational diseases; (2) the training of industry and labor to the value of industrial health conservation; (3) the elevation of medical relations and standards in workmen's compensation; (4) a scrutiny of all social legislation affecting industrial health; (5) a clarification of relationships between industrial and private practitioners; (6) the improvement of relations between physicians and insurance; and (7) the establishment of working relations with all state agencies interested in industrial health. The need for coöperation be-

tween all interested agencies, both official and voluntary, is plain. The private practitioner, either as an individual or through the state or local medical organizations, should utilize to the fullest extent the services which may be rendered by official agencies in the field. In order to accomplish their objectives, public health workers in industry and in the various government services must make a genuine effort to aid in the development of industrial health services through the agencies of organization of the private physician. No program of a public health nature can be carried to its logical conclusion without such coördinated effort. In the past there has too often been obvious failure to effect such coöperation. This failure must be recognized and surmounted if the best interests of the industrial worker are to be served.

STANLEY J. SEEGER, M.D., *Chairman,*
Council on Industrial Health,
American Medical Association.

PRE-ELECTION ACTIVITIES OF THE N.P.C.

THE National Physicians Committee, as all physicians should know, is the organization of physicians throughout the country interested to the extent of five or ten dollars a year, or a little publicity effort or both, in the future of medical practice in our country. The members of this organization appreciate the high grade of medical care furnished in our country compared with other countries, favor continued trial of methods aimed to relieve the unequal distribution of costs of sickness, but are opposed to the government's taking over the practice of medicine.

The function of the National Physicians Committee since its organization three years ago has been primarily publicity—to acquaint the public with the achievement of American medicine and to emphasize the desirability of maintaining the practice of medicine in America as a private and not a governmental activity. This Committee transmits from its headquarters in Chicago stories which preach sound medicine to over 12,000 newspapers throughout the country. Definite results of this publicity are intangible, but its policy is sound. Last July the Committee obtained the services of about 2,000 of its members in forty-eight states to sound out some 800 candidates for Congress on their attitudes towards questions of importance to physicians. The questions put to them were:

1. Do you favor exempting the professions from the provisions of the anti-trust laws?
2. Do you favor the enactment of legislation which will provide for physicians as a professional group a definite status and the obligation to maintain standards designed to protect the public in matters pertaining to health?
3. Do you favor payroll tax deductions—Federal Compulsory Insurance—to provide for hospital and/or medical care costs in the United States?
4. Do you favor entrusting to the medical profession the responsibility for preserving, extending and further improving our system of medical service in the United States?
5. Do you favor any restrictions or limitations on the choice of physician by any individual seeking the services of a doctor?

The purpose of the contact of these candidates was to acquaint them with Medicine's point of view concerning Compulsory Health Insurance and other medical and health issues and to explain the nature and meaning of the Federal Court decision branding all physicians criminals and calling their attention to the need for new legislation exempting the profession from the provisions of the Sherman Anti-Trust Laws.

More than 100 of the candidates signed the questionnaires and added supplementary comment. The successful candidates at least know the viewpoint of physicians. From the replies received it is estimated that more than 300 out of 435 Congressmen have pledged themselves:

To preserve the professional status for physicians
As unalterably opposed to compulsory health insurance
To avoid—at any cost—the sacrificing of the sacred doctor-patient relationship

This preëlection request by the Physicians Committee as to the stand on medical matters of each candidate for Congress is a new venture. This political effort is much like the system used in Minnesota. The aim is to reach every congressman through a physician in his home community when adverse legislation is pending in Washington. While a candidate's stand on medical legislature is not the entire consideration to be taken into account as to his qualifications for Congress, yet between two candidates both equally patriotic regarding the conduct of the war and the one opposed to and the other in

favor of the government taking over medical practice, it is well to be informed.

The N. P. C. has issued its call for support of the physicians of America.

Minnesota's record in support of the National Physicians Committee is enviable. Last year Minnesota physicians contributed more money to the Committee than those from any other state. This year we are far behind our last year's record in support of this movement which deserves the united effort of all medical men. In spite of the many demands for financial support the N. P. C. deserves continued support.

OUR LADY OF GOOD COUNSEL FREE CANCER HOME

REV. JAMES L. CONNOLLY
Saint Paul, Minnesota

On December 8, 1941, a home was opened in Saint Paul for the benefit of poor people, victims of cancer. It aims to provide care for the afflicted without consideration of race, or color, or creed. In the brief period that the doors of the home have been opened it has given hospitality to more than ninety patients, representative of the various nationalities and faiths of people in the Northwest. The services of the home are free. No remuneration or compensation is accepted by those in charge for the care they give their patients.

The name of the home is: Our Lady of Good Counsel Free Cancer Home. It is located at the corner of Cleveland and St. Anthony Avenues, in Saint Paul, easily accessible by bus and trolley from all points of the Twin Cities. A group of sisters carry on the work of the home. They are of the Catholic faith and wear the religious habit of the Dominican Order. Their community is called: *Servants of Relief for Incurable Cancer.* As the name signifies, they are dedicated especially to shelter and care for people whose malignancy is considered not subject to remedy and who happen to be indigent in the sense that they could not meet normal hospital expenses. At the home, the sisters do all the nursing. They do the laundering and the cooking besides.

The accommodations of the home are for sixty-seven patients. However, there is room sufficient to permit an expansion to house as many as one hundred sick. The home is arranged attractively with two large, bright, high-ceilinged wards on each floor. Pictures, plants, and flowers are used effectively to provide a cheerful atmosphere. Each ward is serviced from a utility-room which is well provided with all necessary accessories. While the facilities of the home do not allow for surgery or x-ray treatments, most of the means necessary to assure the comfort of the patients and adjust them to the character of their illness are secured. There is a well-stocked pharmacy. The building and grounds afford ample space for the use of ambulatory patients, and there are two large parlors for the reception of visitors. A physician is in attendance and subject to call.

It is interesting to note that this work on behalf of the cancerous poor, while new to the Northwest, has been known on the Eastern seaboard for almost fifty years. The youngest daughter of Nathaniel Hawthorne began it quietly and unostentatiously in a small apartment which she rented on the East Side in New York. Prominent as a poet and writer, known to society with her husband as a popular member of the younger set, Rose Hawthorne Lathrop had her father's interest in the poor and afflicted. She felt a sense of personal responsibility for them. And when she became aware through the sickness of a dear friend, Emma Lazarus (herself a poet of renown), of the mental as well as the physical discomforts that accompany cancer, she felt herself impelled to give her time and devotion to ministering to the needs of poor people whose suffering was accentuated by neglect. Even while her husband was living, she followed a course of nursing in the New York Cancer Hospital, and set up a service of house-to-house nursing. After the death of her husband in 1898, she gave all her thought to this work, and enlisted the sympathies and aid of her many friends. In a short space of time, her East Side apartment grew to become a nursing home where twenty or more patients of both sexes could be cared for and her efforts were supported by those of other young women who were drawn by the force of her example to help in the work. One of her first recruits was a young woman, a portrait painter, who came to New York to study art. Alice Huber had a letter of introduction to Mrs. Lathrop. It was supposed to open the door to New York society. She brought the letter to Mrs. Lathrop in her East Side dingy home, timidly offered to help, and within a few months time gave up all thought of a career in art and took up instead the tasks of nursing poor bodies that she found beautiful even amid the waste and the sores of their affliction.

Such a work of kindness could not go unnoticed. People commented on it. Physicians coöperated with it. Men of means contributed towards maintaining it. And it was not long before, with increasing demands and growing resources, a new home was set up in Westchester County. There on high hills overlooking the Hudson was founded in 1901 a home that is an emphatic manifestation of the fundamental goodness of humankind.

In this same year, 1901, Mrs. Lathrop obtained the approbation by church authorities of her work. She became the foundress and first superior of a religious community whose chief object was to provide free care for poor people afflicted with cancer. To foster her ideals and to acquaint others with the work being done, Mother Alphonsa Lathrop, as she was called in religion, issued a monthly publication, entitled: *Christ's Poor.* In it she sketched the story of her labor of love, recounted many little anecdotes of happenings in the two free homes that she had established, listed the needs and acknowledged the benefactions received. It

is worth recording that Mark Twain volunteered his aid saying, in part, in a letter to Mother Alphonsa:

"I have known about this lofty work of yours since long ago—indeed from the day you began it; I have known of its steady growth and progress step by step to its present generous development and assured position among those benefactions to which the reverent homage of all creeds and colors is due; and I am glad in the prosperous issue of your work, and glad to know that this prosperity will continue and be permanent—a thing which I do know, for that endowment is banked where it cannot fail until pity fails in the hearts of men. And that will never be" (Oct. 19, 1901).

Mark Twain was accurate in his estimate of human pity. The work has not failed. It has grown to consist now of six homes in which upwards of seventy sisters care for in the neighborhood of a thousand cancerous patients a year. The Saint Paul home is the sixth one established. The other Homes are: St. Rose's Home, New York City; Rosary Hill Home, Hawthorne, N. Y.; Sacred Heart Home, Philadelphia; Rose Hawthorne Lathrop Home, Fall River, Mass.; Our Lady of Perpetual Help Home, Atlanta, Ga. Each of these foundations is practically debt free. When the Saint Paul Home was opened it had but little debt, and all the monies for the purchase of the property and the preparation of the home were borne by the community that was to do the work. Since the establishment of the Home in Saint Paul, there has been no public solicitation of funds. Nor will there be. The Home does not look to support from the Community Chest or any organized charity. It takes nothing in the way of remuneration from the families of the sick cared for. Support has been of a voluntary, unsolicited nature, and it has not been slow in coming. Various organizations of women have volunteered their aid in preparing bandages and dressings for use at the Home.

For the information of physicians who might be interested in directing patients to accept the hospitality of Our Lady of Good Counsel Free Home, the following points are stressed:

1. Any poor person, afflicted with cancer that is considered irremedial can be entered into the Home on recommendation of physician or clergyman.

2. There is no limitation of acceptability based on religious or racial grounds. The Home is conducted by sisters of the Catholic faith. But they welcome the afflicted with cancer of every sect and color. The only limitation indicated, and it is a reasonable one, is that the patient must be certified to be mentally sound. The fact of the Home being organized on a ward basis and the close association of the patients is sufficient warrant for this condition being made.

3. The services of the Home are open to people, regardless of locality. The circumstance that makes for admission is to be poor, afflicted with cancer, and to come with a recommendation from a physician.

4. The Home is a free home. The patient is welcomed to whatever benefits the Home can supply.

5. There are at present about twenty patients in the Home, so the resources are far from being taxed.

In an institution of this kind, the mortality is naturally high. Many defer their application for admission until they are almost at the threshold of death. While the sisters in charge have no intention of refusing patients in such extremity, they are conscious of the fact that to make transfer of a sick person when the end is near often causes fatal hemorrhage. It is part of the purpose of the Home to prepare patients to meet what is beyond with hope and calm. For this reason they have emphasized their willingness to receive cancerous poor people who have a fair expectancy of living on for a time. Often enough, when cancer is diagnosed in the case of a patient who is poor, it will have reached a stage not amenable to resist remedial care. Such cases would be considered as deserving of attention at the hands of the Servants of Relief for Incurable Cancer.

The attention of physicians of the Northwest is invited to the service offered at Our Lady of Good Counsel Free Home. Such an institution in our community cannot but bring to us all a better sense of brotherhood, a finer and more sensitive compassion for the needy and afflicted. Nathaniel Hawthorne often expressed such sentiments in his writings. From his youngest child, his favorite daughter—Rose Hawthorne Lathrop—we have had a forceful expression of the ideal in application. And the home recently established in Saint Paul is a memorial and a continuation of her work.

TUBERCULOSIS ON THE INCREASE

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association,* called attention to the threat of an increase in tuberculosis in this country in a series of talks given in the Twin Cities before various groups including the Minnesota Education Association, and the Minnesota Public Health Association at their annual conventions in October. His talks here were a part of the Christmas Seal educational program, preliminary to the opening of the 36th annual Seal Sale.

"When we examine the death rate of the nations at war abroad, we find that the one rate that is steadily rising is tuberculosis," said Dr. Fishbein. "Among the recruits examined by our army in this war the rate for tuberculosis rejection is less than half of what it was in World War I, showing that the nation as a whole has made tremendous advancement in overcoming this disease. This has been brought about by the extensive examinations of great numbers of young boys and girls, using the tuberculin test and the x-ray examinations and giving opportunity for sanatorium treatment and preventorium care to those needing it."

A warning that it will take the greatest effort possible to hold tuberculosis in check in this country is sounded by President Roosevelt in endorsing the Christmas Seal Campaign, President Roosevelt said:

"The unholy alliance between war and disease is particularly powerful in the case of tuberculosis. Tuberculosis has increased in every past war. The disease is increasing alarmingly in many warring European and Asiatic countries.

"In the United States tuberculosis is now at the low-

est rate in our history. But, to hold the disease in check during wartime will demand the greatest effort possible on the part of the people, the medical profession, the tuberculosis associations and the official health departments. Coöperation of all people in the fight against tuberculosis is imperative.

"The tuberculosis associations are well under way in their intensified and expanded wartime campaign. I have full confidence that the American people will generously add the purchase of Christmas Seals, the main support of the National Tuberculosis Association and its seventeen hundred affiliated associations, to their many other wartime activities."

The latest authentic figures on the increase of tuberculosis in certain European countries and Canada compiled by the National Tuberculosis Association have just been released through the Minnesota Public Health Association. They are as follows:

"In England and Wales, between 1939 and 1941, deaths from all forms of tuberculosis increased 12 per cent. This increase is twice as high as that which occurred between 1914 and 1916.

"In Scotland, between 1939 and 1941, all tuberculosis deaths increased 18 per cent.

"In Paris, during the first six months of 1941, tuberculosis deaths increased 10 per cent over the deaths from the disease in the first half of 1939. The number of food ration cards, issued in the fall of 1940, points out a decrease of 14 per cent in the city's population since 1936, thus making the increase in tuberculosis deaths more significant.

"According to the Canadian Tuberculosis Association, the tuberculosis death rate in 1941 increased five per cent over the 1940 rate, the first appreciable increase in deaths from the disease in that country in fifteen years.

"Unconfirmed but frequent reports from Germany emphasize a pronounced recent increase in tuberculosis, diphtheria and scarlet fever, but no detailed reports signed by accredited physicians or statisticians covering vital statistics in Germany for the last few years are available.

"Reports of alarming increases in the disease in China, Greece, The Occupied Low Countries and Poland have been received in this country, but no exact figures are available. No significant reports on tuberculosis have been received from Russia, Italy or Finland."

OBSTETRIC CARE FOR WIVES OF ENLISTED MEN IN MINNESOTA—A CORRECTION

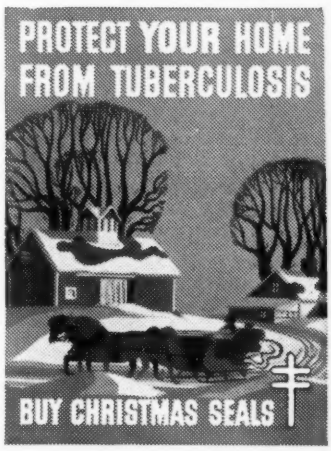
Physicians are notified that funds are not available to the State Board of Health for payment for medical and hospital obstetric and pediatric care needed by the wives and infants of enlisted men in the military services. It is true that, as announced on page 945 of the November issue of MINNESOTA MEDICINE, there was a small Federal appropriation available for this purpose. It is also true that the State Board of Health requested an allotment of these funds for use in Minnesota. However, the United States Children's Bureau recently notified the State Board of Health that the Federal appropriation was exhausted in the first twenty-two States submitting approved plans for the use of the funds. Therefore, the program will not become effective in Minnesota unless the Congress passes a bill now under consideration. This bill, which is known in the Senate as S-2738 and in the House of Representatives as HR-7503, is intended to provide these needed funds. Physicians are referred to page 47 of the September 5, 1942, issue of the *Journal of the American Medical Association* for detailed information on this bill.

In replying to the State Board of Health request for these funds, the United States Children's Bureau disapproved the Minnesota plan for administering the funds because it required investigation of financial need for assistance. The United States Children's Bureau regards this program as a replacement of a governmental service ordinarily provided by the Army and Navy in peacetime but impossible of maintenance during the war. This new aspect of the program, which was not made clear at the time it was originally presented in Minnesota, provides that the patient and the physician make joint application for payment for necessary medical and hospital services. Under this plan the primary responsibility for decision as to who shall receive the benefit of the funds will rest with the physician.

This new aspect of the program is being studied by the special committee appointed by the Council of the Minnesota State Medical Association. The recommendations of this committee will be presented to the Council at the first opportunity so that Minnesota may be prepared to act promptly in the event the bill before Congress is passed and the Federal funds become available.

In the meantime, physicians are advised to refer patients in need of assistance to County Welfare Boards and to local Red Cross Chapters.

EDITOR'S NOTE: The above statement by Dr. Viktor O. Wilson, Director of the Division of Child Hygiene of the Minnesota Department of Health, presents the present status of Federal provision for obstetrical care for the wives of enlisted men as applied to Minnesota and corrects the statement made on page 945 of the November number of MINNESOTA MEDICINE to the effect that funds were at present available in Minnesota for this purpose.



MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

CONFERENCE ACTS TO PROTECT MEDICAL LICENSURE

Representatives of six state medical associations in this area met in Saint Paul, November 8, and agreed by formal resolution that "under no circumstances should existing standards for medical licensure be lowered."

This important action came as a result of suggestions arising out of the war emergency that licensure requirements in the states be relaxed and that, for the period of the war, men whose training and background does not measure up to current standards, should be licensed to practice in the place of men who have gone into the armed services.

The conferees rejected this suggestion on two accounts, first, because lowering standards will gravely lower the quality of medical service now and in the future and destroy, out-of-hand, accomplishments that have taken fifty years to build; second, because reports from all six states represented revealed no acute shortage of physicians in this region.

Adopts Name

The conference which took this important action formally constituted itself as the "North Central Medical Conference" at this meeting and agreed to meet at least annually, oftener at call, in Saint Paul.

The occasion marked a revival of the old Northwest Regional Conference which lost its character as a conference of this region and became, eventually, The National Conference on Medical Service which now meets annually in Chicago.

Membership Limited

States to be represented in the new association will be limited to Minnesota, Iowa, Wisconsin, North Dakota, South Dakota and Nebraska. Dr. W. L. Burnap of Fergus Falls acted as chairman of the first conference. Officers for next year will be Dr. R. G. Arveson of Frederic, Wisconsin, President, and Mr. R. R. Rosell, Executive Secretary of the Minnesota State Medical Association, as Secretary.

Procurement and Assignment has operated effectively in all six states, these reports revealed, to retain essential men and to avoid stripping any community of all medical service. Plans for future recruiting have been carefully made and sources of additional medical officers have been located from communities where they can still be spared.

Closer Contact Needed

Representatives generally expressed awareness of the wartime danger of hasty social legislation in Washington. Radical expansions of the social security laws and precipitate reorganizations of the public health service already threaten in the name of the emergency. All voiced a need for closer contact with Congress and the federal agencies so as to be informed quickly upon proposals which might seriously affect medicine.

In many cases, such proposals are not legislative at all. They are regulations coming out of the Washington bureaus, regulations which might readily be altered for the better protection of the sick if information about them were available while they were in the making.

Story Would Be Different

There is, for instance, the regulation which calls for everybody, including physicians, to turn in all but five tires, including the extra pair of snow tires which nearly all medical men who must drive in all kinds of weather and roads possess, or use them in place of the two regular tires for the period of their usefulness. Much effort has been expended to secure a relaxation of that ruling for physicians but so far without avail. If it had been possible to present the case to the Office of Price Administration before, not after,

the regulation had been made, the story would have unquestionably been different.

There is also the regulation requiring a physician's prescription for the purchase of ordinary rubbing alcohol which might have been avoided, perhaps, if the effect had been explained in advance to Washington rationers. The good to be secured from this sort of prohibition is small, at best, and the penalty exacted in terms of the hard-pressed physicians' time is wholly out of proportion. One of the best ways to meet the so-called doctor shortage is surely to conserve the time of the practitioner at home so that nothing nonessential will keep him from serving his people.

Committee Appointed

The question of how the Washington situation is to be met was discussed from many points of view and the Conference eventually decided, by resolution, to appoint a committee which will "facilitate and coördinate the opinions expressed concerning legislative and other matters in Washington." On this Committee are Drs. J. D. McCarthy of Nebraska, R. E. Bernard of Iowa, L. W. Larson of North Dakota, C. A. Dawson of Wisconsin, C. E. Sherwood of South Dakota, and A. W. Adson of Minnesota.

PREPAYMENT PLANS DISCUSSED

Procurement and Assignment and the much head-lined shortage of doctors occupied the major part of the time of medical secretaries who attended the annual Secretaries' Conference in Chicago in November.

Medical Service plans highlighted the second day's program, however, and here, with reports before them from many parts of the country, the secretaries were impressed again with the fact that no plan anywhere has yet proved itself to be the answer to the cost problems of medicine.

Massachusetts has now joined the list of states, including New York, Pennsylvania, Michigan, California and others who have embarked upon pre-payment or indemnity plans sponsored by medical societies.

These societies are undoubtedly piling up invaluable experience out of which some day may develop workable plans for insurance against costs of medical care.

Partial Coverage Preferred

So far, however, not one of them can be said to have achieved an unqualified success, either from the standpoint of the public or the physicians. Full coverage for all medical needs was especially revealed to be almost everywhere unsuccessful. It runs afoul of the old hurdle—if premiums are low enough to be attractive to the public, they are not high enough to be financially sound.

Partial coverage, for surgical services only, is now regarded by nearly all as preferable. Lower premiums are possible with this coverage and control is simpler.

Enabling Act Necessary

It was pointed out, with emphasis, to all states and societies who contemplate such plans, that special enabling acts are essential. This is insurance, even though of the nonprofit type, and physicians, themselves, must assume no responsibility not clearly protected by law.

They must also make very certain that no plan for any type of coverage is made which links or submerges the doctor with the hospital in management or organization. Experience has made it very clear that any plan for medical care must be run by the physicians as a sponsoring organization and furthermore, actual administration of the plan must be in the hands of a physician.

In any case, nothing came out of the Chicago Conference which would warrant any immediate change in the watchful waiting policy established by the Minnesota State Medical Association with regard to sickness insurance plans in Minnesota.

The need for experimentation is not acute in Minnesota and the penalty might well be loss of funds and prestige that would greatly impede future constructive action by the Association.

THOSE PERSUASIVE BRITISHERS

English physicians are talking about extensive expansions of their National Health Insurance System after the war.

The report of a commission appointed by the British Medical Association on postwar planning, published in the current issue of *Medical Care*, looks forward to a "comprehensive national health policy" which will correct the haphazard distribution of functions among national and local governments and add consultant, specialist and hospital services to insurance benefits. If the report is adopted, it will extend benefits to an estimated 90 per cent of the population.

Articles by Viscount Dawson of Penn and Sir Frederick Menzies, Chief Medical Officer of the

London County Council, are reprinted with the report in this issue to show what prominent British medical men are thinking about in connection with medical services of the future in Britain. These men are writing for Britain about British conditions but their persuasiveness makes especially apt the warning by the late Dr. S. S. Goldwater of New York on the possible effect of these English reports upon American readers.

Said Dr. Goldwater:

"What I have to say is not really a criticism but a friendly admonition that the Editor of *Medical Care* should not permit himself to fall victim to the charm of British essayists. Great Britain is fortunate in having so many distinguished members of the medical profession giving heed to medical-economic problems, but I have yet to meet a Britisher, however distinguished, however charming personally, however cultivated in science and the arts, and however masterly a writer, who is competent to write a medical ticket for the United States.

"I think we would do well to emulate the studious attitude and polished style of the English medical economic essayists while carefully avoiding any attempt to fit their highly specialized formulæ to our different proportions and conditions."

NO QUININE

Among the wartime shortages discussed in Chicago was the lack of quinine. The situation has become very serious as everybody who has read the story of Bataan and Corregidor knows. The result in terms of supplies at home is that no quinine may be prescribed at all except as an anti-malarial agent or in combination with urea-hydrochloride. Pharmacists have been required to turn in their supplies of quinine regardless of age, quantity or nature. They have been permitted to retain only enough quinine sulphate of hydrochloride to meet current needs. Physicians are urged to keep this fact in mind and manage without it.

NOT A LAW

By error, the bill known as the Tolan Bill, committing chiropractors to treat injured federal employes under the United States Compensation Act, was referred to in this section of the November issue of MINNESOTA MEDICINE as a law, whereas the bill has not yet passed the House of Representatives, so it has been reported favorably out of committee. A comparable bill committing the Army Medical Corps to appoint osteopaths to internships in Army hospitals did become law at the last session, however, and both are examples of the need for watchfulness in Washington.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Physicians Licensed July 10, 1942

By Examination

Albrecht, H. H., Marquette U., M.D. 1942, Floodwood, Minn.

Andersen, Howard Arne, U. of Minn., M.B. 1942, 3904 13th Ave. S., Minneapolis, Minn.

Anderson, William Hodgson, U. of Minn., M.B. 1941; M.D. 1942, Box No. 110, Alexandria, Minn.

Bacon, Warren Wright, Coll. Med. Evang., M.D. 1942, N.P.B.A. Hospital, Saint Paul, Minn.

Baker, Charles Edward, Northwestern, M.B. 1941; M.D. 1942, Fergus Falls, Minn.

Barton, Robert Linhart, U. of Mich., M.D. 1938, Mayo Clinic, Rochester, Minn.

Bellville, Titus Philemon, Marquette U., M.D. 1941, 924 Essex S. E., Minneapolis, Minn.

Bentson, James Hoffman, U. of Minn., M.B. 1942, Ancker Hospital, Saint Paul, Minn.

Bergan, Robert Otto, U. of Minn., M.B. 1942, Minneapolis General Hospital, Minneapolis, Minn.

Bixler, Louis Clifford, Indiana U., M.D. 1937, University Hospitals, Minneapolis, Minn.

Ceder, Elmer Theodore, U. of Minn., M.B. 1929; M.D. 1930, Mayo Clinic, Rochester, Minn.

Chalmers, James Hugh, U. of Minn., M.B. 1941; M.D. 1942, J. C. Medical Center, Jersey City, N. J.

Colton, Warren Alfred, Jr., U. of Minn., M.B. 1941; M.D. 1942, U. S. Veterans Adm., Kecoughtan, Va.

Cress, Paul Cronan, U. of Minn. M.B. 1942, Ellsworth, Minn.

Duerr, Eleanor Elizabeth, U. of Minn., M.B. 1942, Minneapolis General Hospital, Minneapolis, Minn.

Dwinnell, Leonard Anthony, Northwestern U., M.B. 1941; M.D. 1942, 569 Portland Ave., Saint Paul, Minn.

Evensta, John Berg, Geo. Wash. U., M.D. 1941, Minneapolis General Hospital, Minneapolis, Minn.

Ferguson, Donald John, U. of Minn., M.B. 1942, 4912 Penn Ave. S., Minneapolis, Minn.

Gilbert, Jarvey, U. of Minn., M.B. 1942, Fresno County Hospital, Fresno, Cal.

Graham, Robert Judson, Northwestern U., M.B. 1940; M.D. 1941, Mayo Clinic, Rochester, Minn.

Greenberg, Albert Joseph, U. of Minn., M.B. 1942, 1329 Lincoln Ave., Saint Paul, Minn.

Hagen, Kristofer, U. of Minn., M.B. 1942, Wm. J. Seymour Hospital, Eloise, Mich.

Hall, Betty Julia, U. of Minn., M.B. 1940; M.D. 1941, 515 Queen Ave N., Minneapolis, Minn.

Hallin, Roger Paul, U. of Minn., M.B. 1942, 3611 Cedar Ave. S., Minneapolis, Minn.

Hayford, William D., U. of Minn., M.B. 1942, Wesley Mem. Hospital, Chicago, Ill.

Hill, Earl, U. of Minn., M.B. 1942, 1800 Vincent Ave. N., Minneapolis, Minn.

Jack, Laurine Davison, U. of Minn., M.B. 1942, Shreveport Charity Hospital, Shreveport, La.

Johnson, Tennyson Gates, U. of Minn., M.B. 1942, 1326 St. Antoine St., Detroit, Mich.

Kirkeeng, Melvin J., U. of Minn., M.B. 1942, Orange County General Hospital, Orange, Cal.

Lueck, Wallace Wilson, U. of Minn., M.B. 1942, Wayne County Hospital, Eloise, Mich.

Lund, J. Benjamin, U. of Minn., M.B. 1942, Emanuel Hospital, Portland, Ore.

Macaulay, Warren Lowell, U. of Minn., M.B. 1942, San Bernardino County, Charity Hospital, San Bernardino, Cal.

Mann, Frank Daniels, U. of Minn., M.B. 1942, Strong Mem. Hospital, Rochester, N. Y.

Marr, George Edward, U. of Louisville, M.D. 1936, Mayo Clinic, Rochester, Minn.

Martinson, Elmer James, Coll. Med. Evang., M.D. 1942, Wayzata, Minn.

McCormick, Donald Phillip, U. of Minn., M.B. 1941, Minneapolis General Hospital, Minneapolis, Minn.

McEvoy, Joseph Peter, U. of Minn., M.B. 1942, Ancker Hospital, Saint Paul, Minn.

Montgomery, George Edmond, Jr., U. of Minn., M.B. 1941; M.D. 1942, Mayo Clinic, Rochester, Minn.

Murray, Nelson Arnold, Tulane U., M.D. 1939, Mayo Clinic, Rochester, Minn.

Mussey, Robert Delevan, U. of Minn., M. B. 1942, Cincinnati General Hospital, Cincinnati, Ohio.

Olson, Burton G., U. of Minn., M.B. 1942, Orange County Hospital, Orange, Cal.

Patterson, Robert Bruce, U. of Minn., M.B. 1942, St. Mary's Hospital, Duluth, Minn.

Perkins, Marsh Olin, U. of Minn., M.B. 1941; M.D. 1942, 2190 Sargent Ave., Saint Paul, Minn.

Peterson, Willard Everett, U. of Minn., M.B. 1942, 3245 1st. Ave. S., Minneapolis, Minn.

Posch, Joseph Louis, U. of Minn., M.B. 1942, Detroit Receiving Hospital, Detroit, Mich.

Poirier, Ralph Alexander, U. of St. Louis, M.D. 1942, Detroit Mount Carmel, Mercy Hospital, Detroit, Mich.

Preston, Lewis Frederick, Baylor U., M.D. 1939, Mayo Clinic, Rochester, Minn.

Ralph, James Robert, Marquette U., M.D. 1942, 617 Portland Ave., Saint Paul, Minn.

Ryan, Bernard F., U. of Oregon, M.D. 1936, Mayo Clinic, Rochester, Minn.

Schneider, Robert Arnold, U. of Minn., M.B. 1942, Minneapolis General Hospital, Minneapolis, Minn.

Sterner, John Joseph, St. Louis U., M.D. 1942, 171 S. Lexington Pkwy., Saint Paul, Minn.

Stowe, Lyman Maynard, Yale U., M.D. 1938, University Hospitals, Minneapolis, Minn.

Taylor, Gerald Joseph, U. of Minn., M.B. 1941; M.D. 1942, 910 8th Ave. N., St. James, Minn.

Turner, James Lynn, Northwestern U., M.B. 1940; M.D. 1941, Mayo Clinic, Rochester, Minn.

Van Gordon, Donald James, U. of Minn., M.B. 1942, 1024 A. St., Crookston, Minn.

Van Rooy, George Tardiff, U. of Minn., M.B. 1941; M.D. 1942, 4213 Sheridan Ave. S., Minneapolis, Minn.

Walker, George Lewis, U. of Minn., M.B. 1941, 635 W. Broadway, Winona, Minn.

Wallace, George Thomas, Rush Med. Coll., M.D. 1938, Mayo Clinic, Rochester, Minn.

Watkins, Dale Baxter, U. of Minn., M.B. 1942, St. Luke's Hospital, Duluth, Minn.

Wert, Alvin DuBois, U. of Rochester, M.D. 1941, Minneapolis General Hospital, Minneapolis, Minn.

By Reciprocity

Hawley, Geo. Maxwell Blackstock, II., Johns Hopkins U., M.D. 1940, Northern Pump Co., Fridley, Minn.

Nester, Hansford Dorsey, U. of Maryland, M.D. 1936, Mayo Clinic, Rochester, Minn.

Spearing, John Henry, Jr., U. of Chicago, M.D. 1938, Gopher Ordnance Co., Rosemount, Minn.

National Board Credentials

Rogers, Howard Milton, U. of Pittsburgh, M.D. 1935, Mayo Clinic, Rochester, Minn.

Wass, Harold E., U. of Buffalo, M.D. 1938, 1039 Lowry Med. Arts Bldg., Saint Paul, Minn.

NEW TEST IMPROVES OPERATION FOR SCIATICA

A new test that tells more exactly the spot for operation on the back in cases of sciatica and low back pain is reported by Dr. Walter E. Dandy, of Johns Hopkins Hospital (*Jour. AMA*, Oct. 24).

In almost all cases of sciatica with low backache, Dr. Dandy points out, the trouble is due to rupture or defect of an intervertebral disk, the layer of fibro-cartilage between the bodies of the vertebræ. Treatment by operation is "absolutely safe and a cure is practically assured," he states.

The diagnosis, he believes, can be made solely on the patient's story of attacks of sciatica and low backache occurring after a relatively trivial injury, such as a lift, bend or strain, with the pain made worse during attacks by coughing or sneezing. In almost all cases the affected disks are at the fourth or fifth lumbar vertebra.

In order to determine the location more precisely, Dr. Dandy says that during the operation the surgeon should push the spines of the fourth and fifth spinous processes downward and determine the mobility of each vertebra. The affected disk will be where the greater movement is shown because the defective disk has weakened the spinal column locally and this causes the mobility.

This free play at the disk is responsible for the intensification of the pain by coughing or sneezing and if the patient can stiffen his back before the cough or sneeze the pain will be ameliorated.—*Science News Letter*, November 28, 1942.

BALKAN PLANT GIVES MORE EFFECTIVE DRUG

A crystalline substance from a Balkan digitalis plant, or foxglove, has proved more effective in treating heart disease than the digitalis in common use, Dr. Francis E. Chamberlain and Dr. Maurice Sokolow, of the University of California Hospital, report.

The substance is called cedilanid and is found only in *Digitalis lanata*. Terming it the "first superior substitute for digitalis yet to be found," the California physicians say that it produces the same effect as digitalis and acts more rapidly. In many cases, they report, patients were benefited within ten to twenty minutes after being given cedilanid. It may be given by mouth or by injection into a vein. Their report states that this drug is now on the market and readily available to physicians.—*Science News Letter*, November 28, 1942.

TUBERCULOSIS IN WARTIME

Control of tuberculosis under conditions of war challenges all available resources. The medical history of World War I reveals to us how mortality rates for tuberculosis increased greatly during the war and some years thereafter, especially in Europe. The massing of armed forces for training purposes, mixing individuals from areas of high tuberculosis prevalence with those from areas relatively free of the disease, confronts the military establishment as one problem in tuberculosis control. The concentration of families of industrial workers in defense and cantonment areas, under unhygienic living conditions where sanitation is limited or absent, presents another terrific public health problem. Unless national efforts are directed towards combating these specific factors in the tuberculosis problem, we may well expect an upward trend rather soon in the tuberculosis mortality curve for the United States which has had a beautiful downward trend from 114 per 100,000 per year in 1920 to 45.9 in 1940.—HERMAN E. HILLEBOE, P. A. Surgeon-in-charge, Tuberculosis Control, States Relations Division, United States Public Health Service.

INDUSTRIAL HEALTH

PHYSICAL EXAMINATIONS IN EMPLOYMENT

Physical examinations for employment are of considerable value in industry. Often these examinations must be done quickly, but with care and accurate observations. The clothing is all removed and a record is made of age, weight, height, race and all abnormalities for a future reference.

Some unions, to my knowledge, allow the employer, at his own discretion, to discharge a new workman during the initial fifteen-day period, but thereafter an employe's priority is established and he must not be discharged without the consent of the union. In other words, a man once accepted might be retained indefinitely. Countless controversies arise from injuries associated with or superimposed upon previous ailments. In observing and examining the man, it is therefore well to reject the potential risk.

Previous Injuries Noted

On examination of the head and neck we notice among other things previous injuries. The eyes should be carefully checked. It has so happened, but rarely that an individual has claimed full compensation for the loss of partial eyesight whereas the original vision was not normal. People with poor vision or one sightless eye are added risks, as are men with defective hearing. The teeth, if infected, may be a hazard—for example, one person with a supposedly injured back was paid compensation. The removal of an abscessed tooth with prompt recovery resulted in the discovery of a wrong history. The chest should be observed for empyema scars and the sequelæ. Breathing is also noted. In the heart examination we are particularly watchful for the diseased heart and rapid pulse, the extreme hypertension and valvular diseases. Wassermann tests are desirable. Reflexes often give important clues. It is known, arthritic hearts at times terminate in bacterial endocarditis and if associated with an injury would cause considerable litigation. We have had three cases of bacterial endocarditis complicating injuries. One patient recovered through the use of sulfadiazine. Once a heart case is employed you usually place them at work as best possible. To create harmony for all, in our plant at present, we have been obliged to place at work two old employes, one an extreme hypertensive heart case and another individual who has a very rapid pulse with an associated heart involvement. They are given light jobs, but are decided risks at the best. In considering the circulatory system we also feel people with advanced varicosities and ulcers should be rejected. These workers have caused us considerable trouble.

The abdomen is observed for long scars and associated incisional hernias. A short history may or may not reveal an ulcer ailment. We have had three workers with no particular previous history, perforate their duodenal ulcers at work. They all recovered from surgery, but one maintained an injury caused it. The urine examination, of course, is of value.

In examining for hernias, a careful palpation is done. Markings for a truss may warn you of a healed hernia from injection treatment. It is our opinion these injections hold for only a reasonable time. We have encountered in industry strangulated ventral, intra-abdominal, femoral and inguinal hernias. They are all likely compensable.

In respect to the genital system we reject acute gonorrhea and undescended testicles. They are definite hazards. One undescended testicle in our plant terminated in sarcoma. Hydroceles and varicoceles are rejected if severe, otherwise accepted for work. The muscular system is observed for atrophies, pain or restricted motion. Many times we notice sore backs by having the individual touch the floor with both hands. We also believe the long slender back or the extremely short stubby one is more prone to injury on heavy lifting. The glandular system is palpated

(Continued on Page 1014)

In Memoriam

FRANK CLINTON ANDRUS

Dr. Frank Andrus died of coronary thrombosis on November 14, 1942. His death was an unexpected blow to his family and friends since he was only thirty-five years of age and was just entering upon a brilliant career in pathology.

Dr. Andrus received his M.B. degree from the University of Minnesota in June, 1932, and his M.D. degree in June, 1933, after an internship at the Minneapolis General Hospital. He then spent one year as a Fellow in Medicine at the Minneapolis General Hospital and the subsequent three years as a Fellow in Pathology at the University of Minnesota. In July, 1937, he was appointed Senior Instructor in Pathology at Ohio State University. In April, 1938, he was appointed director of the laboratory of the Springfield City Hospital but retained his connection with the Department of Pathology at Ohio State University. In September, 1939, he was made director of the laboratory of the Minneapolis General Hospital, and was given the rank of Assistant Professor in the Department of Pathology at the University of Minnesota.

On September 3, 1942, he joined the Army with the rank of Captain in the Medical Corps. He was stationed for a short time at the Army Medical School at Washington, and on October 30 he began his duties as Chief of the Laboratory Section at the Percy Jones General Hospital at Battle Creek, Michigan.

Dr. Andrus was highly regarded by his friends and associates. His training in internal medicine made him especially valuable as a consultant for his clinical colleagues. His keen intelligence and sense of humor will long be remembered by those who had the privilege of his friendship.

Dr. Andrus is survived by his wife and two young children. The physicians of Minnesota extend to Mrs. Andrus their deep sympathy.

—E. T. Bell.

ELMER JULIUS EKLUND

Dr. Elmer J. Eklund died suddenly at his home in Norwood, Minnesota, November 4, 1942, in his fifty-seventh year, having practiced in that locality for thirty-five years.

He was born in Minneapolis December 17, 1884, the son of Gustav Eklund and Louisa Marie Truwe Eklund. He attended Stevens Seminary in Glencoe and after graduating in 1902 entered the University of Minnesota. Here he received his medical degree in 1907 and then served as intern at Saint Joseph's Hospital in Saint Paul.

In 1908 Dr. Eklund began practice in Young America, marrying Elizabeth B. Collins that same year. He moved to Norwood in 1917 where he had since practiced except for a trip to Berlin and Vienna in 1934 for postgraduate work.

Dr. Eklund was always an active individual. He was mayor of Young America for two years and was Carver County coroner for four years. He was a director of the Carver County Telephone Company at one time, and Health Officer for Norwood and several nearby townships. He was also company surgeon for the Chicago, Milwaukee and the Minneapolis and St. Louis railways.

During World War I he was a member of the Local Draft Board. He was also a member of the Scott-Carver County Medical Society and the Minnesota State and American Medical Associations, the A. F. and A. M. 142, the R. A. M. at Glencoe, the Knights Templar at Hutchinson and the Zuhrah Shrine of Minneapolis.

His hobbies included reading and travel. As medical adviser to many in his community and as a friend he was much beloved and esteemed. His wife and two daughters, Mary Louise and Jeanette (Mrs. Robert Yount) survive him.

ARTHUR DOUGLASS HIRSCHFELDER

With the passing of Arthur Douglass Hirschfelder, the University of Minnesota lost the man on whom, in 1913, it bestowed for the first time the title of "Professor and Director of the Department of Pharmacology." He was called to organize this new department at the age of 34. Thus, he was one of the youngest men ever appointed in charge of a department in the University of Minnesota Medical School. After occupying this chair for more than twenty-nine years, Dr. Hirschfelder died, at his home in Minneapolis, on October 11, 1942. The cause of his death was coronary sclerosis.

Dr. Hirschfelder was born in San Francisco on September 29, 1879. He was the only son of Dr. Joseph Oakland Hirschfelder, Professor of Clinical Medicine in the Cooper Medical College of San Francisco (now Stanford University). His father had studied medicine in Leipzig under such masters as Carl Ludwig, the celebrated German physiologist. With this heritage, it was only natural that the son should elect to study medicine. After obtaining his B.S. degree from the University of California in 1897 as its youngest graduate, he began the study of medicine in Munich and Heidelberg under Bütchli, Kühne, and Otto Cohnheim. Later he returned to this country and entered the Johns Hopkins School of Medicine, from which he obtained his M.D. degree in 1903. Then there followed a year as intern under Osler in the Johns Hopkins Hospital, and a second year as Resident in Medicine at the San Francisco General Hospital and Assistant in Medicine, Cooper Medical College, under his father. In 1905 he returned to Hopkins to organize and direct the Physiological Laboratory of the Medical Clinic under Dr. Llewellys F. Barker, the first pure research position in clinical medicine in the United States. He remained at Johns Hopkins until he accepted the Chair in Pharmacology at the University of Minnesota.

His interest in medical research, he admitted on several occasions, was due largely to the influence of three men. These were his close friends, Jacques Loeb, whom he first met in 1899, and Arthur S. Loevenhart, his classmate at Hopkins and later Professor of Phar-

macology at Wisconsin, and, last but not least, his father. It was the encouragement of the latter that started him on his study of the circulation at the San Francisco General Hospital.

His earliest contributions to the medical literature were on the cardiac arrhythmias and the venous pulse. These studies culminated in his well-received book, "Diseases of the Heart and Aorta," the first edition of which appeared in 1910. He continued this work after coming to Minnesota. However, he will also be remembered by his other work at Minnesota such as his introduction of saligenin as a local anesthetic, his studies on the physiology of the kidney, on certain phases of the pharmacology of barbital hypnotics, magnesium, and calcium, and among his graduate students especially, by his contributions on, and interest in, antiseptics and chemotherapy. It was his fondest desire to dedicate his laboratory to the study of the application of chemistry to pharmacology and especially to the therapy of infectious diseases.

He made a number of contributions to the war effort during the first World War. With William Moore he collaborated in a National Research Council project on a study of louse repellents in clothing. A school for pharmacists' mates of the United States Navy was organized at the University largely due to his effort. Finally, he was called as pharmacologist to the Johns Hopkins Research Unit of the Chemical Warfare Service in the laboratory of Professor E. Emmet Reid in Baltimore. After the war he continued as a member of the Board of Consultants, Chemical Warfare Service, Edgewood Arsenal, for a number of years.

No account of Dr. Hirschfelder would be complete without mention of his role as a teacher. This, too, was a part of his University life that he thoroughly enjoyed. He had such a tremendous grasp of the literature, and he was so interested in discoveries and personalities, that, in his lectures, he would occasionally digress extensively, to the dismay of some students and to the great joy of many others; nevertheless, he was always interesting and stimulating. The same was true of his relations with his graduate students. In his earlier years at Minnesota hardly a day would pass that he did not give each student some new idea for his research. In later years his Seminars on the History of Pharmacology were most interesting and informative.

He was well liked by the members of his classes, and he liked them. Many a student in scholastic difficulties owed his continuation in medical school and ultimate graduation to Dr. Hirschfelder's intercession. These tasks, on the part of "The Chief," of helping students in trouble were among his most satisfying accomplishments. He will be loved and missed for many years to come.

RAYMOND N. BIETER.

ANDREAS P. LOMMEN

Dr. A. P. Lommen of Lanesboro spent the last few weeks of his life at Veterans' Hospital at Wood, Wisconsin. He passed away September 16, 1942, at that place and burial was in Lanesboro. The cause of his

death was given as cerebral thrombosis with heart disease, coronary arteriosclerosis with myocardial damage and insufficiency as contributory. He was 75 years of age.

Dr. Lommen was born in Spring Grove, Minnesota, on May 10, 1867, the son of Peter Lommen and Maria Arnston, both of Norwegian birth. His wife was Stella Johnson of Newburg, Minnesota, and there are three children: Helen Lommen of Lanesboro; Robert Lommen, electrical engineer in Milwaukee; Paul Lommen, attorney in Lanesboro.

His education included grade school in Spring Grove, Gales College of Galesville, Wisconsin, for two years, and the University of Minnesota for one year before he entered the University of Minnesota Medical School where he obtained his medical degree on June 6, 1895. He taught rural school for one year, 1890-1891. He was licensed in Minnesota by examination on June 11, 1895.

Dr. Lommen was a member of the Lutheran church, I.O.O.F., Yeoman Lodge, Sons of Norway, and American Legion. He had held office as county physician, county health officer, chairman of the board of education, and was captain in the medical corps during the first World War. He was also mayor of Lanesboro preceding Mayor Teman Thompson. He was a member of the Fillmore-Houston County Medical Society and the Minnesota State and American medical associations.

REPORTS and ANNOUNCEMENTS

MEDICAL BROADCAST FOR DECEMBER

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Saturday morning over Station WCCO, Minneapolis and Saint Paul, and at 11:30 o'clock over Station WLB, University of Minnesota. Speaker: William A. O'Brien, M.D., Director of Postgraduate Medical Education, Medical School, University of Minnesota.

December 5—Senescence and Senility
December 12—Special Health Problems of Middle and Late Life
December 19—Care and Management of Adults
December 26—Dental Replacements

COURSE IN OCCUPATIONAL DERMATOSES

A combined lecture and demonstration course in Occupational Dermatoses will be conducted in Chicago, beginning January 11, 1943, by Dr. Louis Schwartz, Chief of the Dermatoses Investigations Section of the U. S. Public Health Service of Bethesda, Maryland. The teaching period will cover two weeks, the first of which will be devoted to lectures and demonstrations, and the second to plant visits. Dermatologists, industrial physicians and others interested in the course should communicate with Dr. Edward A. Oliver, 55 East Washington Street, Chicago, Illinois.

No limit will be placed upon enrollment for the lectures, but the visits to the plants will be limited to twenty-four enrollees. No fees will be charged.

THE FIFTH ANNUAL FORUM ON ALLERGY

This international postgraduate society will meet in the Hotel Statler in Cleveland, Ohio, the week end of January 9 and 10, 1943. This Forum will offer in most intensive presentation both the new and the old in Allergy. The meeting will be characterized by its use of all the various types of instruction. Formal lectures, special talks, dry clinics, study groups, moving pictures, Kodachromes, panel discussions, ending with an "Information on Allergy, Please," will all be used to teach the physicians of the United States and Canada. Not only will specialists in this new field of Internal Medicine gather but also those whose interests are in allied fields of medicine will be welcome, for in wartime every physician is called upon to advise and treat allergic patients. This is especially true of those in Internal Medicine, Diseases of Children, Diseases of the Skin, Diseases of the Eye, Diseases of the Nose and Throat, as well as those engaged in basic research in Immunology. A course in Immunology as it applies to Allergy will be given the week before by Dr. Eckers to a limited number of physicians and associates. Any physician interested in either or both of the foregoing is invited to write Dr. Jonathan Forman, 956 Bryden Road, Columbus, Ohio, for copies of the printed program and registration blanks.

Among the fifty-eight Allergists participating in the program are most of the leaders in this field including Fred Wittich, M.D., of Minneapolis. Arthur Coca of New York will receive the Forum's Gold Medal and will give the annual Forum lecture on Sunday afternoon.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The regular meeting of the Minnesota Society of Neurology and Psychiatry was held at the Town and Country Club, Saint Paul, Tuesday evening, November 10, 1942. Following dinner at 6:30 o'clock, the program for the evening included papers on "Tetanus" by Dr. A. B. Baker and "Sequelæ in Equine Encephalomyelitis" by Dr. H. H. Noran (by invitation).

RED RIVER VALLEY MEDICAL SOCIETY

Thirty-five physicians and their wives were in attendance at the fall meeting of the Red River Valley Medical Society, held in Thief River Falls, October 27. Special guest of the evening was Dr. W. L. Burnap, delegate from the State Medical Association.

The program included presentation of a paper by Dr. Edward Bratrud of Thief River Falls on "Kidney Hemorrhages" and one by Dr. Charles G. Uhley of Crookston, on "Modern Treatment of Burns."

Wives of the physicians attending the meeting were entertained during the evening at the home of Mrs. H. K. Helseth.

RENVILLE COUNTY MEDICAL SOCIETY

The annual meeting of the Renville County Medical Society was held in Olivia, Monday, November 9, in the high school building, where dinner was served by members of the Home Economics class.

Speaker of the evening was Rev. Fr. Carl Wohlford of Clara City, missionary in India for seventeen years, who told of the customs and castes in India.

Dr. James A. Cosgriff of Olivia was elected president of the Society for the coming year.

WASHINGTON COUNTY SOCIETY

The Washington County Medical Society held its regular monthly meeting Tuesday evening, November 10, in Stillwater.

Dr. Everett K. Geer of Saint Paul spoke on "Chest X-Ray Values and Diagnosis." He interpreted thirty-eight radiographs taken of positive Mantoux test reactors at the Stillwater High School, where the test was made on October 13. A discussion hour followed in which Dr. Geer answered questions concerning the subject presented in his talk.

WOMAN'S AUXILIARY

MRS. RAYMOND J. JOSEWSKI, *President*
Stillwater, Minnesota
MRS. W. H. RUCKER, *Publicity Chairman*
Minneapolis, Minnesota

East Central

The East Central Medical Auxiliary met in Cambridge, Minnesota, October 21 with Mrs. D. E. McBroom. Mrs. A. B. Roehlke, president and Mrs. W. P. Gardner, *Hygeia* chairman, gave reports. There were eleven members and three guests present.

Nicollet-Le Sueur

Mrs. Hobart C. Johnson of Nicollet-Le Sueur Auxiliary reports that the group's last meeting was the September Public Relations tea at St. Peter, Minnesota.

Each member presented a vase to the Community Hospital in St. Peter and, from money previously earned, decided to purchase pen sets with chains attached for use at the hospital.

Park Region

The Park Region Medical Auxiliary members were the guests of the Medical Society at their regular dinner meeting at the River Inn, Fergus Falls, October 14, 1942.

Members had the pleasure of hearing Dr. Hall deliver an address covering many interesting features of his recent stay in England with an American medical unit there.

A short business and social meeting then was held at the home of Mrs. W. O. B. Nelson. At this time, Mrs. A. C. Baker gave her report of the State Meeting at Duluth. The president of the auxiliary, Mrs. A. J. Lewis, read the committee appointments for the year, which were as follows:

Ottertail Sanatorium.....
.....Mrs. C. A. Boline and Mrs. K. E. Bergquist
Hygeia.....Mrs. Theodore Satersmœn
Public Relations.....Mrs. A. C. Beker
Publicity.....Mrs. Frank Naegeli

Ramsey County

The Ramsey County Medical Auxiliary plans to continue regular meetings and follow, as closely as possible, the schedule of previous years, in this way keeping members united to carry on the very important philanthropic work planned.

The Red Cross Sewing and Surgical Dressing Unit meets once a week. This unit has been functioning all summer and has thousands of articles to its credit.

A large group belong to the Public Health Speakers' Bureau—for the Christmas Seal Drive, another group has charge of Christmas Seal booths for December 8 and the Ramsey County Auxiliary again, as for many years past, will send a committee to act as judges for the Tuberculosis Essay Contest, as well as to donate a trophy for the winner from Ramsey County.

Two new committees were added this year: (1) The

War Service Committee was appointed, to help whenever called upon at the Service Men's Club in Saint Paul. Ten dollars has been donated to this cause and used phonograph records are being collected. (2) The Sunshine Committee consists of members who will visit the sick members, write notes of condolence, send flowers and contact wives of doctors in the service of the armed forces.

The Medical and Surgical Committee of America is busy collecting used surgical instruments and supplies. The doctors have kindly set aside a room in the medical library for this activity.

The first meeting of the year was held at the home of Mrs. Arnold Schwyzer in Saint Paul with a large attendance. Mrs. R. J. Josewski, State Auxiliary President, spoke to the group, outlining the plans of State Auxiliary activities for the year.

Washington County

Washington County held its October meeting in Stillwater at the home of Mrs. R. J. Josewski, president of the State Medical Auxiliary. The most important measure passed by the group, over which Mrs. R. G. Johnson presided, was a vote placing *Hygeia* in sixteen of the county schools.

During the social hour which followed, a parting gift was given to Mrs. Russell Carlson who left Stillwater October 15 when Dr. Carlson entered military service.

INDUSTRIAL HEALTH

(Continued from Page 1008)

and if general enlargement is noticed, the applicant is rejected. One of our individuals of long employment had enlarged glands in the groin which was lympho granuloma inguinale. As a complication from injury this was denied.

Blond Workers Prone to Dermatitis

People with flat feet are apt to have repeated attacks of pain and discomfort on standing jobs. The blond or auburn type workers are more prone to severe dermatitis, as are the oily-skin employes on greasy jobs or the dry-skin individual on the jobs to aggravate the symptoms. The skin is observed also for color and its healthy appearance. We know also long scars over the long bones may be from previous osteomyelitis or plating. They are potential risks. Your contact informs you often of a careless, an alert, a dependable or a slow, dull worker. Your exchange communications often prewarn you of the malingerer.

A preview of many desirable findings for the incoming workman has been reviewed the importance of which has frequently been experienced by us. Among controversies arising from injuries, under our care, have been sarcomas developing in the injured soft tissue to the leg, superimposed on a fibrous warty growth of years' standing. We have seen three such cases. We have encountered a pathological fracture, a T. B. joint complicating with injury, a charcot joint with injury, numerous back complaints, more as recurrent trouble than actual acute involvements, and a number of injured ankylosed fingers where previous records saved on the permanent injury settlement. We have mentioned strangulated hernias of various types which are compensable, also the bleeding varicosities and slow-healing ulcers.

Careless workers and malingerers are positively undesirable employes. In hazardous employment, rejection of serious potential risks from industry, not only results in saving of time and expense for the employer, but also saves the workman and his family trying moments of anxiety and sorrow which might be their lot.

J. A. Lowe, M.D.

An area of 150,000 square miles, the Oriente of Ecuador and Peru, is believed to be the world's largest *unoccupied land* available for successful settlement and development.

OF GENERAL INTEREST

Dr. O. N. Bossingham of Lake Benton is now in Clarinda, Iowa, where he will remain for the duration of the war, having taken over the practice of his son, Dr. Earl N. Bossingham, who is in service in New Guinea.

* * *

Dr. E. V. Strand and Dr. J. H. Haines of Stillwater this year acted as judges of essays on "Tuberculosis" by Stillwater High School students. Dr. Strand and Dr. F. M. McCarten judged the Junior High School essays.

* * *

Dr. J. de J. Pemberton was re-elected president of the Mayo Clinic staff at the annual dinner held November 16. Dr. F. J. Heck was renamed secretary. Councilors are Dr. H. F. Helmholz and Dr. B. R. Kirklin.

* * *

Dr. Lawrence J. Leonard of Minneapolis has opened offices in Columbia Heights. Dr. Leonard will continue to maintain his office at West Broadway and Oliver Avenues in North Minneapolis, dividing his time between the two communities.

* * *

At the Conference on Venereal Disease Control Needs in Wartime held at Hot Springs, Arkansas, October 21 to 24, under the auspices of the United States Public Health Service, Dr. Arthur H. Sanford of Rochester presented a paper entitled "New Serologic Tests for Syphilis and Their Demonstrated Efficiency."

* * *

Dr. Charles P. Mannin was married to Miss Lucia Carole Bellinger of Atlanta, Georgia, on October 1, 1942 in Atlanta. Dr. Mannin, who has a fellowship in General Surgery at the Mayo Clinic, Rochester, Minnesota, has received a commission as Lieutenant (jg) in the Navy and has reported for duty at the Corona Naval Hospital, Corona, California.

* * *

Dr. Charles E. Lyght, professor of health and physical education at Carleton College, Northfield, and director of the College Health Service, has accepted a position with the National Tuberculosis Association, New York, as director of the Department of Health Education. He will assume his duties in New York soon after the first of the year.

* * *

Dr. Irvine McQuarrie, professor of pediatrics, University of Minnesota Medical School, delivered on November 3 and 4, three addresses in the twelfth Porter Lectureship in Medicine at the University of Kansas School of Medicine. Tuesday, November 3, he spoke at the Kansas City branch on, "Experiments

of Nature and the Advancement of Medical Knowledge." On November 4 he spoke at Lawrence on "Medical Experience in Besieged China," and that night again at Kansas City, on "Diseases of Adrenal Glands in Children." The Porter Lectureship is supported by a sum of money bequeathed to the School of Medicine of the University of Kansas in 1918 by Dr. J. L. Porter of Paola, Kansas. Besides the annual lectureship it provides a scholarship for a worthy student.

* * *

Dr. Jens Ohnstad, pioneer physician of McIntosh, completed thirty-nine years of service as physician in his community on October 7, 1942. In an interview published in the *McIntosh Times*, Dr. Ohnstad tells of his early experiences in the horse and buggy days, going back to his student days in the state medical school, which was then a part of Hamline University. Dr. Ohnstad has practiced continuously in McIntosh since his graduation from medical school with the exception of a short period spent in Minneapolis in perfecting his surgical technique. In 1918, Dr. Ohnstad built the city hospital in McIntosh complete with facilities for surgical and medical treatment. He has kept abreast of medical progress through postgraduate study and has been an active member of his local, county, state and national medical associations. The interview ends with the following tribute to Dr. Ohnstad's contribution to his community: "Dr. Ohnstad can be considered one of the finest of McIntosh citizens, and has given a broad, progressive, unselfish service toward the welfare of the city."

* * *

Interdepartmental Seminar

Subjects presented in the Interdepartmental Seminar at the University of Minnesota, Wednesday, November 25, included the following:

"Earliest Evidence of Deficiency of Thiamin and Riboflavin," Russell M. Wilder, M.D., H. L. Mason, M.D., and M. M. D. Williams, M.D.—Mayo Foundation,

"Manifestation of Prolonged Use of Diets Low in Fat in Dogs," Arild E. Hansen, M.D., Hilda F. Wiese, Ph.D., and Erma Miller, M.S.—Department of Pediatrics.

1. "Reaction of the Human Gall Bladder and Sphincter to Magnesium Sulphate;" 2. "The Effect of Sectioning Nerves to the Sphincter of Oddi;" E. A. Boyden, Ph.D.—Department of Anatomy.

* * *

Physicians in Service

Dr. Russell E. Carlson of Stillwater is stationed at Fort O'Reilley General Hospital, Springfield, Missouri.

Dr. C. E. Stafford of Baudette reported for duty at Barnes General Hospital, Vancouver, Washington, in November. Dr. Stafford recently received word through Washington, D. C., that his parents, who are residents of the Phillipines, are now prisoners in a Japanese concentration camp, and are both well.

Dr. Hendrik Svien of Rochester, who was appointed

assistant surgeon with the rank of lieutenant in the United States Navy last spring, received his orders for active duty and reported at the naval medical center at Bethesda, Maryland, November 1.

Dr. R. A. Whitney of Cambridge is stationed at Fort Sam Houston in Texas. Dr. P. C. Peterson of Braham will take care of Dr. Whitney's practice during his absence.

Major S. B. Lovelady and Captain Louis D. Vaughn of Rochester have been assigned to the medical training battalion at Camp Grant, Illinois.

Dr. W. F. Muir of Graceville reported for duty at Camp Robinson, Arkansas, November 1. He has been commissioned a first lieutenant in the Army Air Corps.

Dr. C. H. Coombs of Bemidji reported for duty as assistant surgeon, with the rank of lieutenant, at the navy training base at Great Lakes, Illinois, November 1. Dr. R. W. Campbell of Cass Lake will take over the practice of Dr. Coombs for the duration of the war.

Dr. Charles A. Aling of Minneapolis received his commission of captain in the U. S. Army and reported for duty at Camp Barkeley, Texas, in November. Captain Aling's practice in Northeast Minneapolis will be taken over by Dr. Ruth Lundberg for the duration of the war.

Lieutenant Harold C. Freedman of Minneapolis, now at Gardner Field, California, has received promotion to a captaincy.

George Chase Christian Professorship

Material expansion of a program of research into the causes of cancer now under way at the University of Minnesota was made possible when the Board of Regents accepted a gift of $5,500 a year, for five years, from the Citizens Aid Society of Minneapolis to support what will be known as the George Chase Christian Professorship in cancer research. It will be the first professorial chair in the University of Minnesota Medical School to be named for an individual.

On recommendation of Dean Harold S. Diehl and President W. C. Coffey, the Regents appointed to the post Dr. John J. Bittner, now associate director and vice president of the Board of Directors of the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine, of which institution Dr. Bittner has been a staff member since 1930.

Dr. Bittner will increase to three a team now composed of Drs. Maurice B. Visscher and Robert G. Green who are studying the etiology of mammary cancer in mice. Studies by Dr. Bittner have shown that young mice born to a high cancer strain mother are likely to develop cancer if nursed by the mother, whereas if taken from her and nursed by a mother from a low cancer strain they are quite likely to be cancer free. Three factors in the etiology of mouse cancer on which he and Drs. Green and Visscher have been working are that cancer is transferred by an agent in mother's milk, that mammary gland development is stimulated by estrogenic hormones, and the

likelihood that a virus agent is present in advance of the cancer development.

Dr. Bittner is credited with much important early work in this approach to the cancer problem. An experiment published by him in collaboration with Green and Visscher indicated that the agent of the milk of females of cancerous strains is a colloid of high molecular weight and may be a virus.

Dr. Bittner will move to Minneapolis with his family as soon as housing and laboratory arrangements can be made. Born in Meadville, Pa., in 1904, he was graduated from St. Stephens College in 1925 and in 1927 became a research assistant at the University of Michigan, receiving his Ph.D. degree there in 1930. He has won many research honors including the Alvarada Prize of the College of Physicians, Philadelphia. In 1940 he delivered the George Chase Christian lecture at the University of Minnesota. The Cancer Institute in the University Hospital is a memorial to the late Mr. Christian, and Mrs. Christian, a resident of Minneapolis, has encouraged the Citizens Aid Society in support of cancer research work for many years.

In the new Minnesota team Dr. Bittner will approach the cancer problem as a geneticist, Dr. Visscher as a physiologist, and Dr. Green as a bacteriologist with a special interest in viruses.

* * *

Hospital News

Dr. Bernard J. Terrell, formerly of Duluth, has been named superintendent of Buena Vista Sanatorium at Wabasha, taking over his duties December 1.

* * *

Dr. A. G. Sanderson of Granite Falls has accepted appointment as resident physician at the Minnesota State Sanatorium at Ah-Gwah-Ching, and is now established in his new position.

* * *

Dr. H. A. Burns, superintendent of the State Sanatorium at Walker, has been appointed by Carl H. Swanson, Minnesota director of public institutions, as head of the tuberculosis control unit in state mental hospitals. Dr. Burns will work on unification of central care and treatment of tuberculosis patients in state mental hospitals, with offices in the State Office Building, Saint Paul. Dr. Burns, who has been at Walker for thirteen years, will be succeeded there by Dr. F. F. Callahan, superintendent of Pokegama Sanatorium.

* * *

Newly elected officers of the Minneapolis Hospital Council, which has been reorganized to include representatives of governing boards of member hospitals in addition to hospital executives, are as follows: President, C. Bolles Rogers, of St. Barnabas Board of Trustees; vice president, Ray Amberg, superintendent of University Hospitals; secretary, Sister Anna Bergland, superintendent of Deaconess Hospital; treasurer, William Kunze, president, Board of Commissioners, Glen Lake Sanatorium. A. G. Stasel, superintendent of Eitel Hospital, was elected chairman of the administrators' section of the Council. The

reorganization plan was adopted to enable member hospitals to improve their services.

* * *

Miss Homer Harris has resigned her position as superintendent of the Virginia Municipal Hospital. Her successor has not yet been named, according to reports received at the time of going to press.

* * *

Glenwood Community Hospital won honors at the meeting of the American Hospital Association in St. Louis, Missouri, in October, when it was named as recipient of the National Hospital Day award for hospitals in cities under 15,000 population.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

A VENTURE IN PUBLIC HEALTH INTEGRATION. The 1941 Health Education Conference of the New York Academy of Medicine. 56 pages. Price, $1.00, cloth. New York: Columbia University Press, 1942.

1942 YEAR BOOK OF GENERAL MEDICINE. Edited by George F. Dick, et al. 848 pages. Illus. Price, $3.00, cloth. Chicago: Year Book Publishers, 1942.

FUNDAMENTALS OF PSYCHIATRY. Edward A. Strecker, M.D., Sc.D., F.A.C.P. Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. 201 pages. Illus. Price, $3.00, cloth. Philadelphia: J. B. Lippincott Co., 1942.

WHEN DOCTORS ARE RATIONED. Dwight Anderson, Director Public Relations of the Medical Society of the State of New York; and Margaret Baylous, Therapist, Charleston General Hospital, Charleston, W. Va. 255 pages. Price, $2.00, cloth. New York: Coward-McCann, Inc., 1942.

THE MAKING OF A SURGEON: A Midwestern Chronicle. Ernest V. Smith, M.D., D.Sc., F.A.C.S. First edition, blue fabricoid, gold-stamped. 344 pages, 45 illustrations. Fond du Lac, Wisconsin: Berndt Printing Co., 1942. Price, $3.00.

The author of this work was graduated from the old University of Minnesota College of Medicine and Surgery in 1907. Prior to that time his life had been one of unmitigated hardship and struggle. An Indiana orphan boy, he performed the most arduous manual labor he could get to do, merely to gain a living; later he worked in the fields, in a Colorado mine, in the villages of arid Kansas, and the bitter-cold streets of Minneapolis, to support himself while he studied first at Wabash College and then the University of Minnesota.

One of the first fellows to be enrolled in what is now known as the Mayo Foundation for Medical Edu-

cation and Research at Rochester, he became the first male surgical assistant Dr. William J. Mayo ever had, after the retirement of Sister Joseph from that post. When he left the Mayo Foundation in 1916 he formed a copartnership at Fond du Lac which has been exceptionally successful and remains so.

His book, which is essentially a plea for the training and code of ethics which Dr. Smith believes should characterize the surgeon of today, is a scrupulously honest presentation by a highly skilled surgeon who has decided convictions as to how surgery should and should not be conducted. The author has not been content to piece together a series of mellowed reminiscences; he has attacked evil where he believes he has found it, and has been quick to bestow praise when he believes praise is merited. His book is forthright and valuable.

FOOD CHARTS: FOODS AS SOURCES OF THE DIETARY ESSENTIALS prepared by a joint Committee of the Council on Foods and Nutrition of the American Medical Association and of the Food and Nutrition Board of the National Research Council. Paper. Price 10 cents. Pp. 20. American Medical Association, Chicago, 1942.

Current interest in nutrition is at a high level and the subject merits all the attention which it is receiving. Information about the composition of foods now is on a quantitative basis. A forceful presentation of some facts about foods as sources of the dietary essentials is provided by the present illustrated essay, which has been prepared by a joint committee of the Council on Foods and Nutrition of the American Medical Association and of the Food and Nutrition Board of the National Research Council. There are eight charts showing the contribution that individual foods may make with respect to the needs for protein, calcium, iron, vitamin A, thiamine, riboflavin, nicotinic acid, and ascorbic acid. A feature of these graphic presentations is that the values are presented in terms of the proportion of the daily requirements which are supplied by typical servings of each food. The requirements selected are the Recommended Daily Allowances of the Food and Nutrition Board of the National Research Council. The charts show, for example, that a serving of about 3½ ounces of cooked greens (beet, kale, chard, mustrd, spinach, turnip) will supply more than 10,000 International units of provitamin A, the daily allowance of which is 5,000 International units. An orange of average size, or half a grapefruit, or a serving of fresh strawberries will supply the 75 milligrams of ascorbic acid which is considered to be a desirable intake of vitamin C. It is interesting to note the unique value of milk as a source of calcium, protein and riboflavin. There is a descriptive paragraph or two about each of the charts. In addition the booklet reproduces the table of Recommended Dietary Allowances and also provides the values of Minimum Dietary Requirements developed by the Food and Drug Administration for purposes of labeling special dietary foods. This little essay thus provides considerable factual information about foods as sources of the dietary essentials.

SURGERY OF THE AMBULATORY PATIENT. L. Kraeer Ferguson. Section on Fractures by Louis Kaplin. 923 pages. Illus. Price $10.00. Philadelphia: Lippincott, 1942.

This book is well written, concise, practical and contains a very excellent chapter on anesthesia. It will be invaluable for the physician who does minor surgery in the office and for interns, but is valuable for any practicing physician.

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Destruction of barracks at Wheeler Field, T. H., December 7, 1941. Photo by U. S. Army Signal Corps.

Lessons from Pearl Harbor

Out of the chaos and confusion—the burns, lacerated wounds and compound fractures—that was Pearl Harbor on that first Sunday of December, 1941 – have come many lessons. Not the least among them is the value of the sulfonamides—used topically for the management of the potentially infected traumata.

Field conditions were ideal for the production of Clostridial infections—yet the incidence of gas gangrene was remarkably low and resulted in no deaths. Hospital facilities and surgical skill were hard-pressed and surgical operations were delayed from hours to days. Due in no small measure to the use of the sulfonamides, postoperative mortality was only 3.8 per cent, and most of these fatalities were from shock and hemorrhage.

Topical use of sulfonamides is assuming increasing importance not alone in military practice but in industry and civil life. These compounds should be regarded as an important adjunct to surgery, regardless of whether the surgeon is dealing with grossly contaminated wounds or maintaining asepsis in his operative field. Further studies must, of course, be made to determine the method of application best suited for each type of wound.

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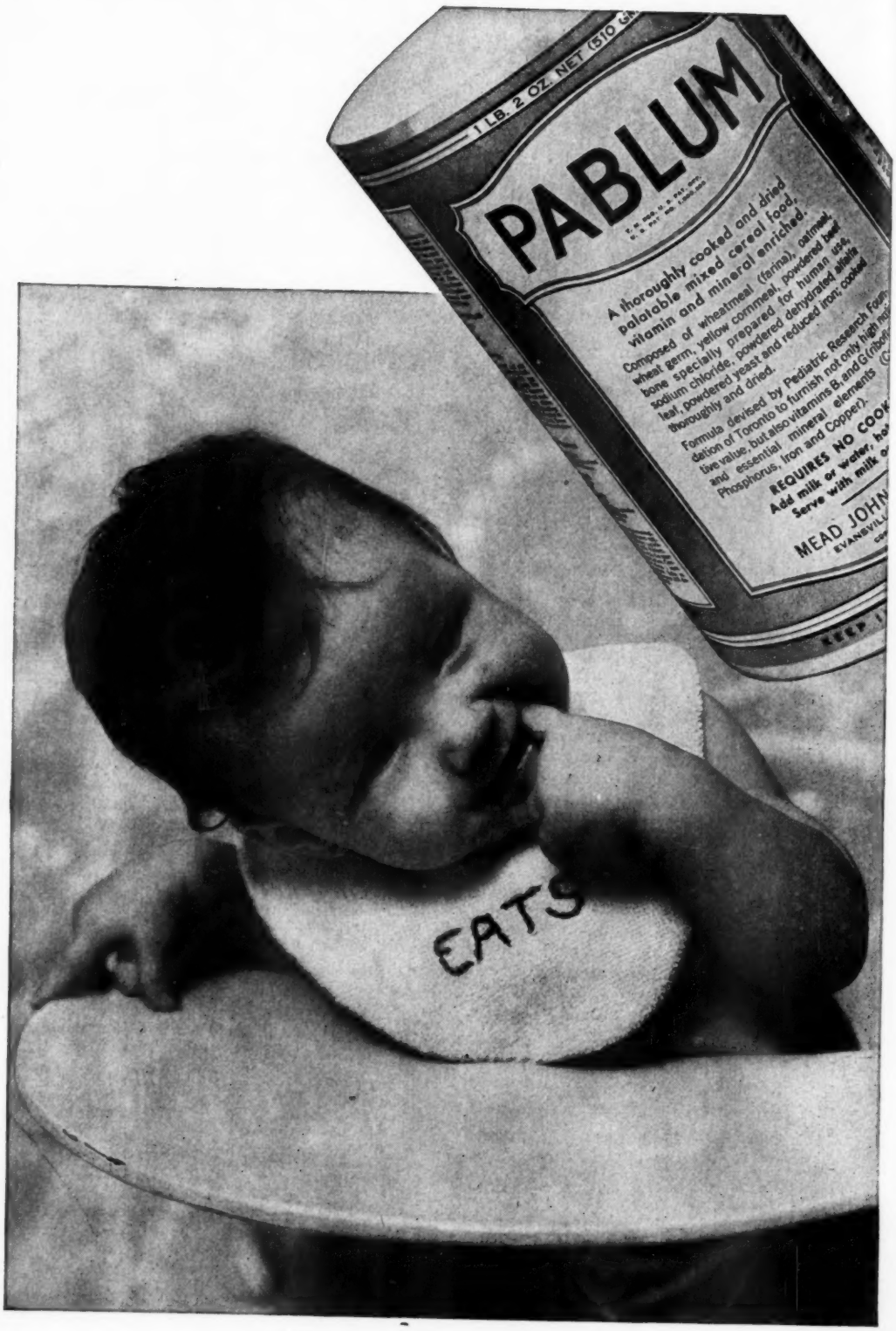
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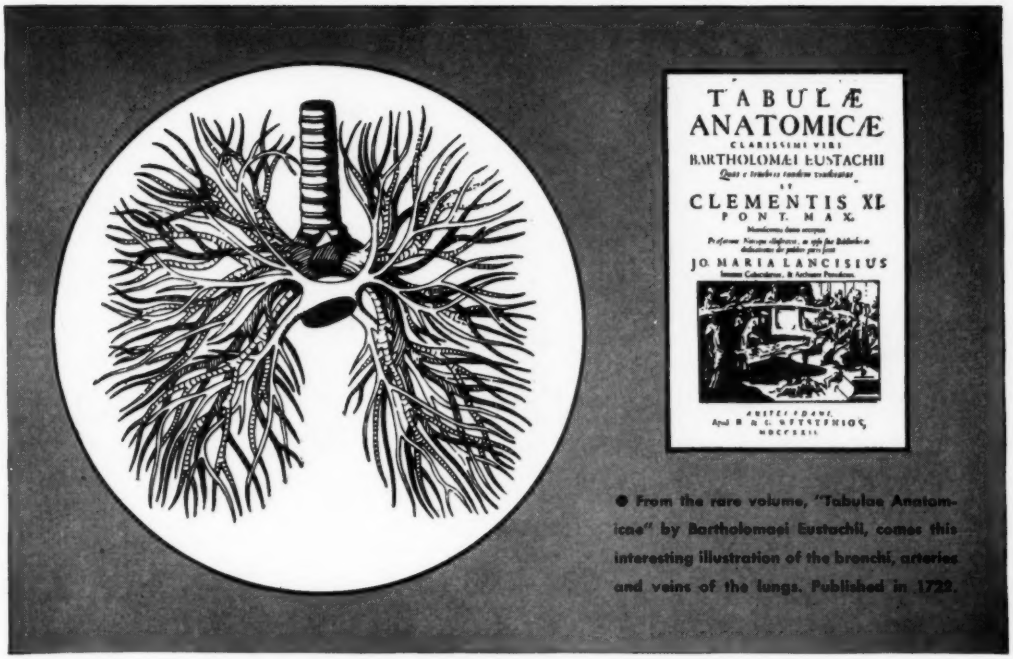

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